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TWENTY-SIXTH ANNUAL REPORT

OF THE

STATE BOARD OF HEALTH,

OF THE

STATE OF RHODE ISLAND,

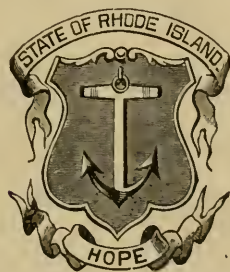
FOR

THE YEAR ENDING DECEMBER 31, 1903.

AND INCLUDING

THE REPORT UPON THE REGISTRATION OF

BIRTHS, MARRIAGES, AND DEATHS IN 1902.



PROVIDENCE :

E. L. FREEMAN COMPANY, STATE PRINTERS.

1911.

St. 24 May  
1917

## MEMBERS

OF THE

# RHODE ISLAND STATE BOARD OF HEALTH.

---

*Post Office Address.*

ALBERT G. SPRAGUE, M. D., *President*.....RIVER POINT.....KENT COUNTY,  
SAMUEL M. GRAY, C. E.....PROVIDENCE.....PROVIDENCE COUNTY.  
JOHN C. BUDLONG, M. D.....PROVIDENCE.....PROVIDENCE COUNTY.  
REV. GEORGE L. LOCKE.....BRISTOL.....BRISTOL COUNTY.  
ALEXANDER B. BRIGGS, M. D.....ASHAWAY.....WASHINGTON COUNTY.  
RUFUS E. DARRAH, M. D.....NEWPORT.....NEWPORT COUNTY.  
GARDNER T. SWARTS, M. D.....PROVIDENCE.....PROVIDENCE COUNTY.

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GARDNER T. SWARTS, M. D., *Secretary*.

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*To the Honorable General Assembly:*

In compliance with the General Laws, the Annual Report of the State Board of Health is hereby respectfully submitted.

GARDNER T. SWARTS, M. D.,

*Secretary.*

## GENERAL REPORT.

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The work of the State Board of Health during the year has been a continuation of the study of the various conditions pertaining to the public health of the State, and the examination of candidates desiring certificates to practice medicine in the State.

### CONTAGIOUS DISEASES.

The regular monthly reports of the number of cases which have occurred in the several cities and towns, including scarlet fever, diphtheria, and typhoid fever, have been received from the health officers of the respective towns. These records were begun in 1894, and a comparison of the tables presented makes it possible to determine at any time if there is an unusual prevalence of any of these diseases.

Small-pox continued prevalent in a number of the towns and cities of the State, and a detailed report of this is given in the body of this report.

### WATER SUPPLIES.

No changes have been made in the water supply of Woonsocket. Constant inspection of the water-shed, which is owned or controlled by the city, is maintained. The color of the water remains high, but its bacterial and chemical analyses show it to be a safe water for public consumption.

The same conditions exist on the water-shed of the Newport water supply as have been found for years. The company maintains a close watch upon the portion of the supply obtained from Paradise

brook. The question of filtration of the supply has been considered, but some doubt is expressed whether the quantity of the supply would be sufficient to guarantee satisfactory washing of filtering beds.

The Bristol Water Company continues to supply the same character of water, high in color, and of a woody taste. The condition and possibilities of contamination of the supply have been under investigation during the past year and have continued into this report. The quantity and quality of this supply is questioned, owing to the water-shed being rather flat and the impounding reservoirs limited in capacity.

The water supply of the city of Pawtucket, which supplies many adjacent towns and villages, remains of good quality. Frequent inspections of the shores of the stream lessen the possibility of chance contamination. The inefficient coarse gravel strainer is still in use and serves to remove small sticks and leaves, but does not serve to improve the chemical or bacterial quality of the water materially.

The other supplies in the State have not been modified during the year, and many are of good quality. The Wakefield Water Company supply is of high color. The Westerly supply taken from wells is of the best quality.

#### EXAMINATION OF WATER SUPPLIES AND SEWAGE.

The regular routine examination of all public water supplies of the State has been continued and valuable data is being acquired by the board, which is of great value as showing the variations in the supplies as they occur from time to time. A tendency to deterioration can be noted in any supply by the periodic tests which have been made monthly, or oftener in some cases, and the proper authorities have been notified of changes noted and they have willingly taken action on suggestions offered for any improvement of conditions.

The study of the efficiency of the mechanical filtration plant at



East Providence has been continued, and shows that this plant has continued to present good results.

Samples have been taken at regular intervals to determine the efficiency of the purification processes in use at the several sewage disposal plants of the State.

The work of the chemical laboratory has been done by Mr. Ernest F. Badger, S. B., who has held the position of chemist of the board since the establishment of the chemical laboratory in 1900.

#### WIDAL TEST FOR TYPHOID FEVER.

The board has continued to examine samples of blood for the Widal test in cases of suspected typhoid fever, this examination serving as a valuable assistance to the physicians in the diagnosis of this disease.

#### TUBERCULOSIS.

There was granted to the board a special appropriation of \$1,000 for the purpose of studying the subject of tuberculosis. Under this appropriation the board provided free examination of sputum presented by physicians from cases of suspected tuberculosis, not only to confirm a diagnosis already determined by the physician in charge of the case, but also to assist the physician in making a diagnosis when the symptoms present were doubtful or suspicious.

Literature on precautions for the care of the sputum of the cases which had been determined as actual cases of tuberculosis has been distributed to those afflicted.

#### DIPHTHERIA.

The board was given a special appropriation of \$1,500 for the study and control of diphtheria.

Under this provision it was possible for the board to provide for examination of the secretions from the air passages of cases of suspected diphtheria, and to assist the physician in determining the presence of the disease in doubtful cases, which might present only a suspicious membrane or even an ordinary tonsilitis or sore throat.

In addition to this work there was procured and distributed free, upon the requisition of physicians, a diphtheria anti-toxin for use in all cases where the patients were unable to purchase this valuable remedy.

This anti-toxin was procured at a minimum price provided for use of boards of health under the above conditions. The strength of the material so provided was the same as that sold commercially, but the bulk of the dose was slightly greater; but the effect or benefit was the same.

#### MEETINGS OF THE BOARD.

During the year there were held seven meetings of the board. Two of them were special meetings to consider business which required some urgency of action. At the meetings the work of the board as a medical examining board for the issuance of licenses was continued, along with other matters arising from time to time.

#### WORKING OF THE MEDICAL PRACTICE ACT.

*Licenses Issued.*—During the year sixty-seven applicants presented themselves for examination, under the Medical Practice Act, for a license to practice medicine in this State. Of this number fifty-two passed a satisfactory examination and were granted certificates. A more detailed account of these examinations is given under a separate head later in this report.

*Prosecutions.*—Two druggists were prosecuted for not only prescribing, but advising and treating patients for compensation. These cases were, however, lost. The conditions under which the prosecutions were brought are explained in the body of the report.

#### LEGISLATION.

A bill passed the January session of the legislature providing for the appointment of a Barbers' Commission, which should examine and license all barbers, who were qualified according to an examination provided by the commission. The interest of the State

Board of Health in such a bill rested upon the sanitary aspect of the requirement that the commission cause the barbers so licensed to comply with rules and regulations which were to be approved by the State Board of Health.

An attempt was made to obtain the passage of a law which should permit prescribing by druggists. This request coming at this time had the appearance of an attempt to offset the action taken by the board in the prosecution of the two druggists who had been not only prescribing, but advising and treating certain patients for fee and compensation. This bill failed of passage.

#### MEDAL OF THE PARIS EXPOSITION.

A diploma and silver medal was awarded to the board for an exhibition presented at the Exposition Universelle held in Paris, in 1900. The exhibit consisted of a set of the publications of the board for a long period of years and was presented as showing the work of the board for that period of time.

#### SANATORIUM.

A bill appropriating \$75,000 for the Sanatorium Commission was passed at the January session of the legislature. The commission had reported that they had secured a site for land and gave an estimate of cost for the erection of a suitable building for the purpose. The site selected was at Wallum Lake, in the Northwestern part of the State, near the Massachusetts line, at an elevation of about 650 feet from the sea level. Woods surround the site, and the lake or pond is of considerable length and would supply an adequate amount of suitable drinking-water.

#### GENERAL APPROPRIATION.

The sum of \$6,000 was appropriated for the general uses of the board, the same amount as for the preceding year.

## PERSONNEL OF THE BOARD.

The term of Dr. Albert G. Sprague as a member of the board, from Kent county, expired in 1903, and the place was filled by Gov. Lucias F. C. Garvin, with the advice and consent of the senate, by the re-appointment of the same member for a term of six years, ending January 31, 1909.

SECRETARY'S REPORT.

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TOWN SANITATION.

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1903.



# REPORTS FROM TOWNS

IN RELATION TO SANITARY IMPROVEMENTS, ETC.

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It has been observed, in the previous issues, that a complete annual report of a State Board of Health properly includes an account of the measures taken each year by the municipal authorities, corporations, or individuals for the promotion of the health of the communities under their respective supervision or control. In order, therefore, to ascertain the facts in relation to such measures, and for the purpose of presentation in this report as in the reports heretofore issued, and in the continuance of the design to keep well informed of all proceedings throughout the State on the part of town or city councils or any form of municipal authority in the appointment of health officers or boards of health, and in the direction of improvements which have in view and seem to promise the promotion of public health by the abatement of nuisances or the removal of unsanitary conditions and surroundings, or by the introduction of water for general use, or construction of sewers, or the establishment of other public works which may not only be of great public utility and convenience but also serve in some measure, large or small, in the prevention of disease, the secretary has, as heretofore, solicited replies from the town and city clerks of the several towns and cities, or other municipal officers, in answer to questions proposed in a circular sent for that purpose.

It is designed and hoped that a connected history may thereby be secured of all sanitary improvements of a public character in all parts of the State, from year to year; and the gradual awaken-

ing of the citizens of the different towns to the necessity of sanitary public measures thereby be shown; and also whatever intelligent appreciation of such necessity, and whatever public spirit in existence in the towns there may be, may be known as manifested by the readiness with which needed sanitary measures are adopted.

The following is the form of circular sent at close of the year 1903:

CIRCULAR No. 130.

OFFICE OF SECRETARY OF STATE BOARD OF HEALTH,

PROVIDENCE, R. I., JAN. 1, 1904.

*To the Town Clerk:*

It is, by statute law, made the duty of the secretary of the State Board of Health to make inquiries of town or city clerks, or of the clerks of local boards of health, in regard to the general health and sanitary condition of the towns, and also in regard to measures taken for the improvement of the same, as may be seen by the following section from the

PUBLIC STATUTES, CHAPTER 83.

SEC. 6. The secretary of the said board shall make inquiry, from time to time, of the clerks of town and local boards of health, and practicing physicians in relation to the prevalence of any disease, or knowledge of any known or generally believed source of disease, or causes of general ill-health, and also in relation to the proceedings of the said boards of health in respect to acts for the promotion and protection of the public health, and also in relation to diseases among domestic animals, in their several towns and localities, respectively; and the said clerks of town and local boards of health and said practicing physicians shall give such information in reply to said inquiries, of such facts and circumstances as have come to their knowledge.

*In order to make complete the annual report of this board to the General Assembly, the secretary would respectfully ask your co-operation by answers to the following questions:*

1. Has any work for the promotion of public health been contemplated



or completed in your town by the town authorities, or by private enterprise, during the year? If any, please state what.

2. If by introduction or extension of water service for general use, please state what proportion of the population, by estimation, was supplied with the same at the end of the year.\*

3. If city or town has sewerage system, state the aggregate length of sewers, by estimation or otherwise, and about what proportion of the population has drainage connected with them at the end of the year.\*

4. If by new ordinances in abatement of nuisances, or for any sanitary purpose, please send copy of same; also state how far, to your best knowledge, all the sanitary ordinances have been enforced. Copies of town ordinances especially desired.

5. Has your town any legal board of health beside the town council? If so, please give the names of the officers of the same.

6. Please give the names of the health officers of your town.

7. Has gratuitous vaccination been provided in your town during the past year? What proportion of the population was vaccinated, according to your best knowledge?

8. Have undertakers promptly sent in their returns of death? Please give names of any who do not. (See Public Statutes, Chap. 85, Sec. 1.)

9. Do clergymen make returns of marriages promptly each month, as required by Public Statutes, Chap. 85, Sec. 4?

Thanking you in advance for your assistance, I am,

Yours truly,

GARDNER T. SWARTS,

*Secretary.*

N.\* B.—The town or other clerk should charge a remunerative fee for replying to the above circular, and present to the town council or board of health, it being a service required by law.

\*If not known by the person replying, please state where or of whom such information may be obtained.

## BRISTOL COUNTY.

## BARRINGTON.

1. Nothing for the promotion of the public health has been done during the year.
4. (Contagious disease ordinances in report of 1897, p. 10.)
5. This town has no legal board of health other than the town council.
6. Samuel F. Bowden is the health officer.
7. Gratuitous vaccination was provided during the year. A few school children availed themselves of the same.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

FREDERICK P. CHURCH, *Town Clerk.*

## BRISTOL.

1. Nothing for the promotion of the public health has been done during the year.
2. About fifteen-sixteenths of the population of the town is supplied by its public water service.
3. The approximate length of sewers in this town, exclusive of outlets, is about ten miles.
4. There have been no new sanitary ordinances enacted during the year.
5. This town has no legal board of health other than the town council.
6. Thomas F. Head is the health officer.
7. Gratuitous vaccination was provided during the year.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

HERBERT F. BENNETT, *Town Clerk.*

## WARREN.

1. Nothing special for the promotion of the public health has been done during the year.
3. This town has no sewerage system. Several streets have private sewers, but these have not been extended since the last report. (Health ordinances, see report of 1899, p. 13.)

5. This town has no legal board of health other than the town council.
6. George L. Drown is the health officer.
7. Gratuitous vaccination was provided during the year. Only a small number availed themselves of the same.
8. Undertakers are generally prompt in making returns of deaths.
9. Clergymen generally make returns of marriages promptly.

CHARLES B. MASON, *Town Clerk.*

## KENT COUNTY.

### COVENTRY.

1. A new pest house, costing two thousand dollars, was built during the year.
3. This town has no sewage system.
4. No new sanitary ordinances were enacted during the year.
5. This town has no legal board of health other than the town council.
6. John Winsor, M. D., is the health officer.
9. Clergymen make returns of marriages promptly.

GEORGE B. PARKER, *Town Clerk.*

### EAST GREENWICH.

1. Nothing for the promotion of the public health has been done during the year.
2. There are about eight hundred water taps in town. Fully sixty-four per cent. of the population is supplied therewith.
3. The aggregate length of sewers in this town is six thousand three hundred thirty-five feet. This drains one hundred twenty-five estates. Between seventy-five and eighty per cent. of said estates have connections made. The population of the area drained is between seven and eight hundred.
4. No new sanitary ordinances were enacted during the year. Those in force are well observed. (Health ordinances, see reports of 1894, p. 27; and 1900, p. 15.)
5. This town has no legal board of health other than the town council.
6. Elbridge G. Carpenter, M. D., is the health officer.
7. Any who apply to the health officer may receive gratuitous vaccination. No such returns as would enable one to know what proportion of the population was vaccinated during the year have been made.

8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

GEORGE A. LOOMIS, *Town Clerk*.

#### WEST GREENWICH.

No reply from the town clerk.

#### WARWICK.

4. (Contagious disease ordinances, see report of 1893, p. 45.)
5. This town has no legal board of health other than the town council.
6. Albert G Sprague, M. D., is the health officer.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

JAMES T. LOCKWOOD, *Town Clerk*.

#### NEWPORT COUNTY.

##### JAMESTOWN.

1. Nothing for the promotion of the public health has been done during the year.
2. About two-thirds of the population of this town is supplied by the public water service.
3. The aggregate length of sewers in this town is five miles, and about two-thirds of the population have connection with the same.
4. No new sanitary ordinances were enacted during the year. Those in force have not been well observed. (Health laws, see reports of 1893, p. 46; 1894, p. 29; and 1900, p. 16.)
5. This town has no legal board of health other than the town council.
6. Gideon Lathan is the health officer.
7. Gratuitous vaccination was not provided during the year.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

WILLIAM F. CASWELL, *Town Clerk*.

## LITTLE COMPTON.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.
4. No new sanitary ordinances have been enacted during the year. (Contagious disease ordinances, see report of 1899, p. 15.)
5. This town has no legal board of health other than the town council.
6. W. Scott Wells, M. D., is the health officer.
7. Gratuitous vaccination was not provided during the year.
8. Undertakers are not prompt in making returns of deaths, but upon investigation it was found to be mainly the fault of the physicians.
9. Clergymen make returns of marriages promptly.

JOHN B. TAYLOR, *Town Clerk.*

## MIDDLETOWN.

1. During the year no particular work looking to an improvement of the sanitary conditions of the town or the preservation of the public health was undertaken.
2. There has been no material extension of the water service of this town. Some residents continue to be served from the mains of the Newport Water Works.
3. There is no system of sewage established in this town.
4. The sanitary code in force is generally observed, and the health officer is on the watch for any breaches or violations. (Contagious disease ordinances, see report of 1893, p. 48; also ordinance in regard to transportation of neat cattle in town, report of 1902, p. 18.)
5. The town council acts as the board of health exclusively.
6. George E. Ward is the health officer.
7. No gratuitous vaccination was provided during the year.
8. For the most part, undertakers have returned deaths within a few days of their occurrence.
9. Clergymen make returns of marriage promptly.

ALBERT L. CHASE, *Town Clerk.*

## NEWPORT.

1. Nothing for the promotion of the public health has been done during the year.
2. There has been no extension of the water service of this city during the year.
3. The approximate length of sewers in this city is about nine miles, and about seventy per cent. of the population is connected therewith.
4. All sanitary ordinances in force are well observed.
5. The board of health of this city is composed of the following members: Rufus E. Darrah, M. D., President, Charles E. Lawton, Secretary, Christopher F. Barker, M. D., Samuel P. Cottrell, M. D., Robert Frame, Joseph W. Sampson, Executive officer, George C. Shaw, Inspector of Nuisances, and Cornelius C. Moore, Clerk.
6. Henry Gladding is the health officer.
8. Undertakers are prompt in making returns of deaths.

DAVID STEVENS, *City Clerk.*

## NEW SHOREHAM.

1. Only the usual routine work has been done during the year.  
(Nuisance ordinance, report of 1893, page 50.)
6. Hamilton A. Mott is the health officer.
7. Gratuitous vaccination was provided during the year, but only a few availed themselves of the same.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

EDWARD P. CHAMPLIN, *Town Clerk.*

## PORTSMOUTH.

No reply from the town clerk.

(Dumping ordinance, report of 1899, page 21.)

## TIVERTON.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.



3. This town has no sewage system.
4. No new sanitary ordinances were enacted during the year.  
(Contagious disease ordinances, see report of 1900, p. 19.)
5. This town has no legal board of health other than the town council.
6. Edward P. Stimson, M. D., is the health officer.
7. Gratuitous vaccination was provided during the year, but was needed in only a few cases.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

A. LINCOLN HAMBLY, *Town Clerk.*

## PROVIDENCE COUNTY.

### BURRILLVILLE.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.
4. No new sanitary ordinances have been enacted during the year. (Contagious disease ordinances, see report of 1897, p. 20.)
5. This town has no legal board of health other than the town council.
6. Edward Collins is the health officer.
7. Gratuitous vaccination was not provided during the year.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

EDGAR A. MATHEWSON, *Town Clerk.*

### CENTRAL FALLS.

1. The board of aldermen and superintendent of health have contracted with private individuals for the removal of garbage for the next five years.
2. There are 17.11 miles of water mains in this city, and ninety-five per cent. of the population uses water.

The following is extracted from the report of the city engineer, William Faitoute Keene:—

## FILTER BEDS.

No work on the construction of beds has been done at the filtration plant during the present year, although it was necessary to complete those started the year before. Notwithstanding the fact that the unfinished beds were useless in their present condition, and with a constantly increasing sewage flow, causing a uniformly greater dosage for the beds in use, which at the beginning of the year were greatly overtaxed, no money was applied for their completion, but for additional sewers to be built, which would impair their utility. No consideration of the existing conditions has been shown, when appropriations for constructing additional sewers in this system have been forthcoming, but have been made with the knowledge that they would still further increase the amount of sewage to be treated, and be a menace to the success of the beds.

It is my duty to herewith call your attention to the folly of increasing an existing evil, rather than causing its abatement, and to strongly recommend that no appropriation for any sewer flowing to the filter beds be made until additional filtering area has been provided.

Considering the strength and amount of sewage treated, it is remarkable that the beds have affected the degree of purification attained, although the results are poorer than those for the previous year.

I recommend that some new beds be made, by finishing those already partly constructed, on the easterly side of the plant, and that two entirely new beds be made just west of the present plant, on the land recently obtained in an exchange of property with Frank A. Sayles.

Allowing the two new beds to have a net area of about one-sixth of an acre each, with the completion of some of those now partially constructed, will give about one acre additional filtering surface, which will be sufficient for the present western district sewage system. It will be well to have an appropriation made at an early date to allow the excavation and filling of sand as soon as the frost leaves the ground, which is the most economical and advisable time to do such work, allowing a period for settlement before laying underdrains and pipe carriers.

To complete the work recommended, constructing two new beds, finishing a portion of the area partially filled, laying distributing pipe lines, tile under drains, and building distributing wells will require an appropriation of \$5,000.

The total number of connections with sewers flowing to the plant at present is 312, which connect 353 houses, and show an increase of about 45 per cent. since January 1, 1902. At that time the beds received the maximum amount of sewage they could efficiently purify, and as can be seen from data acquired, they are now required to treat about the same amount of a much stronger sewage. Of the



new connections in this district, 4 are in the 3rd Ward, 39 in the 4th Ward, and 12 in the 5th Ward.

The maximum sewage flow recorded since the opening of the filtration plant occurred during the year 1901, when the number of gallons registered was 14,898,500. In 1902 there were 14,670,800 and this year 14,375,800 gallons, respectively. The analyses furnished by the State Board of Health, have shown that the sewage has grown stronger annually since 1900, making it evident that there is less dilution from water either from rainfall or other sources, probably the former, which would account for a smaller flow, while the constantly increasing number of connections, from 40 to 70 houses annually, should constantly increase the amount of sewage. It is fair to presume from the following tables, that the daily increasing flow of house drainage renders the regulating apparatus at the Lonsdale avenue gate house more susceptible to a slight increase during the first period of rainfall, and shuts off the flow from the pipe line leading to the tanks more quickly, thereby causing the dilution and making the sewage stronger.

Date.	No. of Gallons.	Date.	No. of Gallons.
December, 1901 . . .	1,262,700	December, 1902 . . .	1,273,100
January, 1902 . . .	1,091,000	January, 1903 . . .	1,085,900
February, 1902 . . .	1,029,600	February, 1903 . . .	1,036,000
March, 1902 . . .	1,213,000	March, 1903 . . .	1,055,100
April, 1902 . . .	1,253,300	April, 1903 . . .	1,130,500
May, 1902 . . .	1,324,500	May, 1903 . . .	1,274,500
June, 1902 . . .	1,228,500	June, 1903 . . .	957,000
July, 1902 . . .	1,260,600	July, 1903 . . .	1,424,200
August, 1902 . . .	1,412,000	August, 1903 . . .	1,213,800
September, 1902 . . .	1,129,000	September, 1903 . . .	1,377,800
October, 1902 . . .	1,216,700	October, 1903 . . .	1,245,900
November, 1902 . . .	1,249,900	November, 1903 . . .	1,302,000
	<hr/>		<hr/>
	14,670,800		14,375,800

Year,	Approx. relative strength of Sewage as shown by Albuminoid Ammonia.	Approx. No. of Gallons Water required to dilute Sewage to Unity, or equal to year 1900.
1901	1.00	
1902	1.15	2,210,600
1903	1.26	3,814,400

Equivalent amount of sewage of same strength as that of the year 1901, follow:

Year.	Actual No. Gallons Sewage.	Equivalent No. Gallons Sewage, same strength as 1901.
1901	14,898,500	14,898,500
1902	14,670,800	16,881,400
1903	14,375,800	18,190,200

The relation between the monthly average temperature of the air, the average temperature of the sewage, the maximum and minimum temperature of the air in degrees Fahrenheit are given below:

Month.	Max. Air.	Min. Air.	Av. Air.	Av. Sewage.
December, 1902....	56°	5°	28°	46°
January, 1903....	49°	4°	29°	44°
February, 1903....	57°	2°	31°	44°
March, 1903....	72°	23°	44°	47°
April, 1903....	84°	27°	49°	48°
May, 1903....	91°	35°	59°	55°
June, 1903....	86°	45°	60°	59°
July, 1903....	95°	53°	71°	64°
August, 1903....	81°	51°	65°	63°
September, 1903....	91°	35°	62°	61°
October, 1903....	77°	28°	53°	59°
November, 1903....	76°	16°	39°	57°

Daily measurements for the year have been taken to obtain the flowage of the stream running from the swamp, into which the effluent drains, and from these the following table showing the monthly flow in gallons was compiled. The total number of gallons as estimated is 136,838,200, which shows that the sewage effluent is diluted with about nine times its bulk of pure water.

#### FLOW OF OUTLET STREAM FROM SWAMP.

Month.	Number of Gallons.
December, 1902.....	11,706,750
January, 1903.....	12,536,600
February, 1903.....	9,699,750
March, 1903.....	11,723,600
April, 1903.....	10,690,900
May, 1903.....	10,266,000
June, 1903.....	13,166,250
July, 1903.....	10,699,500
August, 1903.....	13,148,250

Month.	Number of Gallons.
September, 1903.....	9,415,900
October, 1903.....	12,491,600
November, 1903.....	11,293,100
<hr/>	
Total for year.....	136,838,200

A large number of analyses of the sewage effluents and outlet stream have been made through the State Board of Health, by their chemist, Mr. Ernest F. Badger, and show the relative purification acquired under the different conditions actually experienced; the difference between the results obtained during the summer and winter seasons is very noticeable, everything showing up decidedly better during the warm weather. These results are valuable for record, and give an excellent comparison with former and successive years. (Monthly analyses of the outlet stream taken below the point where the effluent from the filter beds enters it, and analyses of the sewage, septic and effluent, are shown in the body of this report under examination of sewages.)

The percentage of purification effected by the septic tank and filters is shown in Appendix C. (See page 22, this report.)

Mr. Badger has devoted much time working on results for this city, and has made several suggestions, and I take this opportunity to thank him on behalf of the city for his sincere and kindly co-operation.

## APPENDIX C.—Purification Effected by Septic Tank and Sand Filters.

(Parts per 100,000.)

	FREE AMMONIA.			ALBUMINOID AMMONIA.			OXYGEN CONSUMED.		
	Sewage.	Effluent.	Per cent. removed.	Sewage.	Effluent.	Per cent. removed.	Sewage.	Effluent.	Per cent. removed.
Cold weather, December 1, 1902 to June 1, 1903.									
Purification effected by Septic Tank.....	11.00	13.12	*19.3	2.34	1.06	54.7	23.30	11.13	52.2
Purification effected by Septic Tank and Sand Filters.....	11.00	7.62	30.7	2.34	.2579	89.0	23.30	3.34	85.7
Warm weather, June 1 to December 1, 1903.									
Purification effected by Septic Tank.....	10.10	14.02	*38.9	2.35	1.013	57.0	25.10	10.66	57.5
Purification effected by Septic Tank and Sand Filters.....	10.10	4.07	59.7	2.35	.1095	95.3	25.10	1.39	94.4

\* Increase.

3. There are 10.779 miles of sewers in this city, and fifty-four per cent. of the population is connected therewith.

5. This city has no legal board of health other than the board of aldermen.

6. Charles F. Sweet, M. D., is the superintendent of health.

7. Gratuitous vaccination was provided during the year, and 437 persons availed themselves of the same.

8. Undertakers are prompt in making returns of deaths.

9. Clergymen make returns of marriages promptly.

C. FRED CRAWFORD, *City Clerk*.

### CRANSTON.

1. Nothing for the promotion of the public health has been done during the year.

2. (See city of Providence supply.)

Agreement as to Water Supply.

The committee appointed by this council on the 2nd day of January 1893, "to make investigation and ascertain the cost and advisability of introducing public water into the town of Cranston," present the following proposition or agreement from the Commissioner of Public Works of the City of Providence, which is read, and the committee upon motion of Councilman King is discharged:

DEPARTMENT OF PUBLIC WORKS,

COMMISSIONER'S OFFICE, CITY HALL.

ROBERT E. SMITH, Commissioner.

PROVIDENCE, Jan. 4th, 1893.

MR. EDWARD STANLEY,

*Member of Committee on Supply of Water for Town of Cranston.*

DEAR SIR: If the town council of the town of Cranston will exempt the leading mains and distribution pipes from taxation I will agree to extend pipes and supply takers in said town with water at the lowest rates charged under the same conditions in the city of Providence. As to other property belonging to the city in said town, if it is assessed above a fair valuation, that can be adjusted by proper legal proceedings.

The present requirements in the city of Providence for extension of water mains is, that the income shall amount to seven per cent. of the cost of furnishing and laying the water-pipes. Any guarantees that are now in force in said town

will be scaled down to this basis in case said town council will agree to the above conditions.

Yours very truly,

(Signed)

ROBERT E. SMITH,  
Commissioner.

And it is further agreed and understood, if the within named proposition is accepted by the town of Cranston within sixty days from date, the water bills paid by the water takers of said town before such proposition is accepted will be adjusted by rebating the amounts charged in excess of the schedule rates of water for the city of Providence, the same to be deducted from the first bills paid by them after such acceptance.

(Signed)

ROBERT E. SMITH,  
Commissioner.

Upon consideration of the foregoing proposition of the Commissioner of Public Works of the City of Providence, it is voted unanimously to accept it.

3. This town has no sewage system.

Extracts from Town Ordinances (1903).

### CHAPTER III.

#### PUBLIC WATERS.

SECTION 1. No person shall throw, cast or deposit, or cause to be thrown, cast or deposited into or upon the margin of any of the ponds or rivers or other body of water situate in this town, any animal or vegetable matter or substance whatsoever.

SEC. 2. Every person violating the provisions of this chapter shall for each offence pay a fine of not less than one dollar nor more than twenty dollars.

### CHAPTER X.

#### GARBAGE.

SECTION 1. No person shall put, throw or empty or cause to be put, thrown or emptied, swill, garbage or any animal or vegetable matter liable to injure the health or by obnoxious smell annoy the neighborhood, upon any vacant lot or public highway.

SEC. 2. Every person violating the provisions of this chapter shall for each and every offence pay a fine of not less than five dollars or more than twenty dollars.



## CHAPTER XIV.

## CONTAGIOUS DISEASES.

SECTION 1. Every physician located or practising in the town of Cranston, who shall know or suspect that any person whom he or she shall be called upon to visit, or who comes or is brought to him or her for examination, is suffering from, or is afflicted with Cholera, Yellow Fever, Typhoid Fever, Typhus Fever, Measles, Scarlet Fever, Small Pox, Diphtheria or Membranous Croup, shall forthwith make report thereof to the Superintendent of Health, and said Superintendent of Health shall furnish blanks for that purpose.

SEC. 2. Whenever there is a case of Small Pox, Scarlet Fever, Diphtheria or Membranous Croup in any house, the Superintendent of Health shall cause to be placed upon such house a warning sign bearing the name of the disease there existing, except in the case of Membranous Croup the sign shall be the same as that used in cases of Diphtheria. In cases of Small Pox or Scarlet Fever such sign shall remain upon the house at least five weeks from beginning of the last case and until desquamation shall have ceased. In cases of Diphtheria and Membranous Croup such signs shall remain for at least ten weeks. In case of a death from one of these diseases the warning signs shall remain on the house until the body has been removed from the house, and no person shall in any case remove any such warning without permission of the Superintendent of Health.

SEC. 3. No person living in a house where there is a person sick with Small Pox, Scarlet Fever, Diphtheria or Membranous Croup shall attend school, public or private.

SEC. 4. No person suffering from or afflicted with Whooping Cough, Mumps, Chicken Pox, Measles or any contagious disease shall attend public school.

SEC. 5. The Superintendent of Health shall notify the principal of any school or the pastor of any church whenever Small Pox, Scarlet Fever, Diphtheria or Membranous Croup exists in any family any member of which attends such school or church; and the Superintendent of Health shall also send notice to the public libraries of every case of Small Pox, Scarlet Fever or Diphtheria which is reported to said Superintendent of Health.

SEC. 6. The funeral of any person who has died while suffering from or afflicted with Small Pox, Scarlet Fever or Diphtheria, or Membranous Croup, shall be private.

SEC. 7. Every person violating any of the provisions of this ordinance shall be fined not less than ten nor more than twenty dollars for each offence.

5. This town has no legal board of health other than the town council.

6. Daniel S. Latham, M. D., and John Bigbee are the health officers.
7. Gratuitous vaccination was provided during the year, but no information showing what proportion of the population was vaccinated is available.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

DANIEL D. WATERMAN, *Town Clerk.*

#### CUMBERLAND.

1. Nothing for the promotion of the public health has been done during the year.
3. This town has no sewage system.  
(Contagious disease ordinances, see report of 1893, p. 53.)
5. This town has no legal board of health other than the town council.
6. James A. Cullen, M. D., is the health officer.

JOHN F. CLARK, *Town Clerk.*

#### EAST PROVIDENCE.

No reply from the town clerk.

(Contagious diseases ordinances, see report of 1893, p. 54.)

#### FOSTER.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.
4. No new sanitary ordinances were enacted during the year.
5. This town has no legal board of health other than the town council.
6. Henry Arnold, M. D., is the health officer.
7. Gratuitous vaccination was not provided during the year.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

GARDNER HOWARD, *Town Clerk.*



## GLOCESTER.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.
4. No new sanitary ordinances were enacted during the year. All existing ones have been well enforced.
5. This town has no legal board of health other than the town council.
6. George A. Harris, M. D., is the health officer.
7. Gratuitous vaccination was not provided during the year.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

CHARLES W. FARNUM, *Town Clerk.*

## JOHNSTON.

1. Nothing for the promotion of the public health has been done during the year.
2. The Providence Water Works laid about one thousand feet at Manton on street with half a dozen houses thereon.
4. No new sanitary ordinances were enacted during the year. All existing ones have been well enforced. (Contagious disease ordinances, see report of 1896, p. 20.)
5. The board of health of this town is composed of Ralph H. Shaw, M. D., Hiram Kimball, and William H. Mathewson.
7. Gratuitous vaccination was provided during the year.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

STERRY K. LUTHER, *Town Clerk.*

## LINCOLN.

1. Nothing for the promotion of the public health has been done during the year.
2. No extension of the public water service of this town was made during the year.

3. This town has no regular sewage system but the Lonsdale Company in the old village of Lonsdale about eight or ten years ago instituted sewerage to a certain extent, probably about three-quarters of a mile in length and effecting about one thousand people.

4. (Contagious disease ordinances, see report of 1896, p. 25.)

5. This town has no legal board of health other than the town council.

6. James W. Walker, M. D. is the health officer.

7. Gratuitous vaccination was provided during the year and probably four or five per cent. of the population availed itself of the same.

8. Undertakers are more prompt than formerly in making returns of deaths.

9. Clergymen residing in this town are fairly prompt in making returns of marriages. Those residing in other towns are not as particular.

JOHN JOHNSTON, *Town Clerk.*

#### NORTH PROVIDENCE.

1. Nothing for the promotion of the public health has been done during the year.

2. This town has no public water service.

3. This town has no sewage system.

4. No new sanitary ordinances were enacted during the year.

5. This town has no legal board of health other than the town council.

6. John T. Northrup is the health officer.

8. Undertakers are prompt in making returns of deaths.

9. Clergymen make returns of marriages promptly.

THOMAS H. ANGELL, *Town Clerk.*

#### NORTH SMITHFIELD.

1. Nothing for the promotion of the public health has been done during the year.

2. This town has no public water service.

3. This town has no sewage system.

4. No new sanitary ordinances were enacted during the year. (Contagious disease ordinances, report of 1893, page 64.)

5. This town has no legal board of health other than the town council.

6. Edgar F. Hamlin, M. D., is the health officer.

7. Gratuitous vaccination was not provided during the year. It was provided in 1901 and 1902 and is believed to have been very thorough.
8. As far as is known, undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

JAMES S. SLATER, *Town Clerk.*

### PAWTUCKET.

2. No large extension of the public water service of this city was made during the year. Practically all of the population is supplied.

3. The aggregate length of sewers in this city is 48.96 miles and about sixty-six per cent. of the population is connected therewith.

The following extracts are taken from the report of the Board of Public Works:

### SCHEDULE.

Population of the city (U. S. Census, 1900).....	39,231
Area of the city.....	8.940 square miles.
Total length of water mains connected with the Pawtucket Water Works.....	153.41 miles.
Total length of sewers.....	48.68 “
Total length of street railways.....	26.52 “
Capacity of pumping engines, 12,000,000 gallons per 24 hours.	
Water pressure in Main street square, 110 lbs. per square inch.	

TABLE SHOWING AMOUNT OF RAIN AND MELTED SNOW IN INCHES FOR THE YEAR ENDING SEPTEMBER 30TH, 1903.

DAYS OF MONTH.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	DAYS OF MONTH.
1.			†.62							.02			1
2.	1.70												2
3.			.36		.28								3
4.	*			.87			.40						4
5.			†.71	1.13	.08							.40	5
6.	1.00	*		***						1.30			6
7.			†.29	*				.05			3.31		7
8.					.67		2.27		.12		*		8
9.		.01							.12				9
10.							.52		1.18	.10			10
11.		*		†1.37		2.50			.17	†	*		11
12.	.94	.05			.74								12
13.									2.28	.06			13
14.	*	.03	†1.68							*.42			14
15.								*			.03		15
16.									.74				16
17.			†1.23		†2.12		.60						17
18.	.01											.06	18
19.	*	*						.18		.90			19
20.											.10		20
21.				1.68						.75			21
22.		.14	1.46							1.00			22
23.	.06												23
24.						3.66	*					.02	24
25.									1.53		.26		25
26.			†1.67	.10						*			26
27.		.95											27
28.	2.11			.55	1.09	.04		*				.43	28
29.										.10			29
30.			.06	.39				.20	.32	.05			30
31.						1.00					.44		31
Totals....	4.29	1.18	8.08	4.86	6.03	7.28	3.79	.43	6.34	4.70	4.14	.91	.....

Total amount of rain and melted snow, 52.03.

Depth of snow, 34," 25."

\*Too small to measure.

†Snow.

‡Snow and rain.

(From City Engineer, Geo. A. Carpenter's report.)

#### SEWERS.

During the year 0.617 miles of sewers have been constructed in the Blackstone river district, making in that section a total of 35.041 miles. In the Moshassuck river section 0.376 miles have been built, making a total there of 13.652 miles. This makes the mileage of the sewers in the city 48.693 miles.

The tables indicate a gradual increase in the number of connections in use per mile of sewers.

#### FILTER FIELDS.

At the filter fields the work started last year has been completed and we now have an acre more of sand beds. The total area of sand surface on which sewage is turned is now 3.358 acres.

The average number of gallons treated each day has been 138,274, with a maximum of 170,968 gallons per day during the month of May.

The following tables show, better than any written statement that can be made, just what these beds have done during the year and also the amount of sewage that has been taken care of by this plant since its construction in 1894.

THE FOLLOWING TABLE SHOWS THE NUMBER OF GALLONS OF SEWAGE RECEIVED AND TREATED AT THE PLANT DURING THE YEAR.

MONTH.	Gallons of Sewage.	Average Gallons Per Day.
October, 1902.....	3,811,720	122,958
November, 1902.....	3,892,383	129,746
December, 1902.....	3,671,608	118,439
January, 1903.....	3,826,147	123,424
February, 1903.....	4,607,470	164,553
March, 1903.....	3,099,900	103,330
April, 1903.....	3,195,100	106,503
May, 1903.....	5,300,020	170,968
June, 1903.....	4,542,340	151,411
July, 1903.....	4,879,120	161,723
August, 1903.....	4,869,780	157,090
September, 1903.....	4,775,356	159,178
Total.....	50,470,944	.....

Average number of gallons per day for the year has been 138,274.

Number of bed.	Area in acres.	Number of doses of ordinary sewage.	Average quantity of ordinary sewage applied at each dose, in gallons.	Number of doses of heavy sewage.	Average quantity of heavy sewage applied at each dose, in gallons.	Total quantity of sewage applied to beds during the year, in gallons.	Equivalent average daily quantity applied per acre, in gallons.*
1.....	.126	48.53	12,600	48	10,080	1,095,358	23,817
2.....	.132	46.16	13,200	42	10,560	1,052,878	21,848
3.....	.133	48.77	13,300	46	10,640	1,138,118	23,443
4.....	.123	48.80	12,300	43	9,840	1,023,446	22,796
5.....	.307	226.64	30,700	.....	.....	6,957,740	62,091
6.....	.211	211.78	21,100	2	16,880	4,502,389	58,459
7.....	.180	225.32	18,000	.....	.....	4,055,794	61,732
8.....	.157	205.21	15,700	.....	.....	3,378,737	58,961
9.....	.176	207.91	17,600	.....	.....	3,659,290	56,963
10.....	.178	202.77	17,800	.....	.....	3,609,248	55,552
11.....	.183	201.37	18,300	.....	.....	3,685,071	55,170
12.....	.219	220.00	21,900	.....	.....	4,818,000	60,274
13.....	.218	218.80	21,800	.....	.....	4,769,840	59,945
14.....	.329	29.00	32,900	.....	.....	954,100	54,717
15.....	.343	78.87	34,300	.....	.....	2,705,405	25,861
16.....	.343	89.37	34,300	.....	.....	3,065,530	28,924

\*Beds 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, figured on basis of 365 days.

Bed 14, figured on basis of 53 days.

Bed 15, figured on basis of 305 days.

Bed 16, figured on basis of 309 days.

TABLE SHOWING AMOUNT OF SEWAGE LET ON AND AMOUNT OF SAND AND SLUDGE REMOVED FROM EACH BED FROM DEC. 1, 1894, TO OCT. 1, 1903.

Number of bed.	Cubic yards of poor sand removed.	Cubic yards of sludge removed.	Average depth in inches of poor sand removed.	Total number of gallons of sewage let on.	Cubic yards of poor sand removed for each 1,000,000 gallons of sewage.
1.....	130	175	73 $\frac{3}{4}$	8,914,295	14.58
2.....	145	168	84 $\frac{1}{2}$	9,061,973	16.00
3.....	129	166	77 $\frac{1}{2}$	8,659,520	14.90
4.....	121	173	77 $\frac{1}{2}$	7,873,868	15.37
5.....	271	.....	66 $\frac{1}{2}$	38,117,411	7.11
6.....	243	48	84 $\frac{1}{2}$	24,339,208	9.99
7.....	191	.....	8	25,218,554	7.57
8.....	179	.....	83 $\frac{1}{2}$	22,418,629	7.98
9.....	177	.....	77 $\frac{1}{2}$	25,043,006	7.07
10.....	217	.....	92 $\frac{1}{2}$	25,162,483	8.62
11.....	166	.....	64 $\frac{1}{2}$	26,166,971	6.34
12.....	188	.....	64 $\frac{1}{2}$	28,900,682	6.55
13.....	193	.....	63 $\frac{1}{2}$	28,327,052	6.81
14.....	.....	.....	.....	954,100	.....
15.....	14	.....	1	2,705,405	5.17
16.....	16	.....	.....	3,065,530	5.22
14B.....	.....	.....	.....	1,706,876	.....
15B.....	.....	.....	.....	1,728,992	.....
.....	2,380	730	.....	288,364,555	.....

14B and 15B are small experimental beds discontinued April 19, 1902.

In previous reports these beds were numbered simply 14 and 15. They are now changed to 14B and 15B to distinguish them from the large sand beds built this year and numbered 14 and 15.

In interpreting the work of the beds, as shown by the above tables, it should be noted that beds, 1, 2, 3, 4, and sometimes bed 6, are used as sludge beds, receiving the sewage from the bottom of the collecting tanks. This sewage is very much stronger than that from the upper part of the tanks and is applied to these beds, one each day, at the rate of 80,000 gallons per acre.

The "poor sand" referred to as removed from the beds, is the surface sand that has gradually become filled with the fine particles of suspended matter carried in the sewage. In scraping off the surface coating as little sand as possible is taken, but it is impossible to remove nothing but dirty sand and some of the clean sand comes off as well.

This amount of "poor sand" is increased by the furrowing of the beds for winter use and the consequent mixing of good and "poor sand" in the bottom of the furrows, but it is our experience that better results are obtained with the filters in the winter season by reason of this furrowing.



From Dec. 8, 1902, to March 16, 1903, the sewage was allowed to run continuously through one of the settling tanks, after the manner of a septic tank, and the tank was not drawn down until the latter date.

By this means the sludge was held back and was not turned on the sludge beds at a time when it would have frozen before the greater portion of the water had passed off.

It will be noticed by the following table that the results obtained by sedimentation and sand filtration are somewhat better than those obtained by the septic tank and the sand filters. Indeed the tank used can scarcely be called a true septic tank as the sewage can be held at a depth of three feet only and this shallow depth doubtless reduces the amount of septic action that would result from a tank eight or nine feet deep.

Former reports indicated that from 38 to 47 per cent. of the organic matter that went into the tank was destroyed or converted into gases and other forms by bacterial action, but later investigations have shown that these first figures were in error, in not taking into consideration the finely divided and suspended organic matter that went off with the liquid, when the tank was drawn down at the end of the experiments to measure the accumulated sludge.

Recent investigations have revealed, that this was no inconsiderable amount and that it would have reduced the percentage figures previously given. It is impossible to tell how much of a reduction this would have made.

The general conclusion to be drawn from our experiments and our experience is, that the greatest good to be accomplished by a shallow tank used in this manner, through the winter season, is the keeping of the sludge from the sand beds. During the remaining months it is more satisfactory to clean the settling tanks each day, using them simply as collecting and sedimentation tanks.



*Averages of Chemical Examinations made by the State Board of Health, October 1, 1902 to October 1, 1903.*

(Parts per 100,000.)

	RESIDUE ON EVAPORATION.			AMMONIA.				CHLORINE.	NITROGEN AS		OXYGEN CONSUMED
	Total.	In solution.	In suspension.	Free.	ALBUMINOID.		Nitrates.		Nitrites.		
					Total.	In solution.				In suspension.	
Sewage, average of 4 analyses (Dec. 8, 1902, to Mar. 16, 1903).....	98.3	59.2	39.1	8.12	1.25	.64	.61	9.38	.....	14.40	
Effluent from Septic Tank, average of 5 analyses (Dec. 8, 1902, to Mar. 16, 1903).....	60.3	47.4	12.9	5.14	.61	.44	.17	6.88	.....	9.22	
Effluent from Septic Tank and Sand Filters, average of 5 analyses (Dec. 8, 1902, to March 16, 1903).....	28.1	A 9.5 B 18.6	2.88	2.88	.0832	.0788	.0044	5.67	1.11	.0142	
Sewage, average of 15 analyses (Oct. 1, 1902, to Dec. 8, 1902, and Mar. 17, 1903, to Oct. 1, 1903).....	106.0	63.8	42.2	7.72	1.41	.66	.75	11.19	.....	13.49	
Effluent from Sedimentation Tanks, average of 15 analyses (Oct. 1, 1902, to Dec. 8, 1902; and Mar. 17, 1903, to Oct. 1, 1903).....	72.1	55.9	16.2	7.37	.94	.62	.32	10.08	.....	9.25	
Effluent from Sedimentation Tanks and Sand Filters, average of 25 analyses (Oct. 1, 1902, to Dec. 8, 1902, and Mar. 17, 1903, to Oct. 1, 1903).....	51.6 A 18.6 B 33.0			1.45	.0798	.0571	.0227	8.64	3.54	.0244	
										1.07	

A=Loss on ignition.

B=Fixed.

*Purification Effected by Septic Tank and Sand Filters.*

(Parts per 100,000.)

	FREE AMMONIA.			ALBUMINOID AMMONIA.			OXYGEN CONSUMED.		
	Sewage.	Effluent.	Per cent. re-moved.	Sewage.	Effluent.	Per cent. re-moved.	Sewage.	Effluent.	Per cent. re-moved.
Purification effected by Septic Tank. ....	8.12	5.14	36.7	1.25	.61	51.2	14.40	9.22	36.0
Purification effected by Septic Tank and Sand Filters. ....	8.12	2.88	64.5	1.25	.0832	94.0	14.40	1.67	88.4

*Purification Effected by Sedimentation Tanks and Filters.*

(Parts per 100,000.)

	FREE AMMONIA.			ALBUMINOID AMMONIA.			OXYGEN CONSUMED.		
	Sewage.	Effluent.	Per cent. re-moved.	Sewage.	Effluent.	Per cent. re-moved.	Sewage.	Effluent.	Per cent. re-moved.
Purification effected by Sedimentation Tanks. ....	7.72	7.37	4.5	1.41	.94	33.3	13.49	9.25	31.4
Purification effected by Sedimentation Tanks and Sand Filters	7.72	1.45	81.2	1.41	.0798	94.3	13.49	1.07	92.1

4. (From State Board of Health report, 1898, page 22.)

RULES RELATIVE TO THE REMOVAL AND DISPOSAL OF NIGHT-SOIL AND THE CONTENTS OF CESS-POOLS.

1. No person shall engage in the business of removing the contents of privy vaults and cess-pools, or shall remove the contents of privy vaults or cess-pools, without first obtaining a license of the board of aldermen; but nothing in this section shall be construed as forbidding any person the owner of a privy-vault or of a cess-pool from removing the contents therefrom provided a permit be first obtained from the city physician.

2. Every licensee must be provided with a pneumatic or odorless apparatus. All tanks, tank wagons, tubs, or barrels must be kept air-tight and free from leakage, and all apparatus used in the business must be kept clean and well-painted, and must have the name of the licensee upon it in plain letters, and must be approved by the city physician.

3. No wagons, tanks, tubs, or other apparatus referred to in section 2 shall be allowed to stand in the street except while in use.

4. All privy vaults and cess-pools must be cleaned by the odorless process, except by permission of the city physician.

5. No privy vault or cess-pool shall be cleaned between the hours of sunset and sunrise, except as directed by the city physician.

6. No person shall deposit within the city the contents of any privy vault or of any cess-pool without permission of the city physician.

7. No licensee shall charge more than five cents per cubic foot for removing the contents of privy vaults or of cess-pools; provided, however, that if there be only one load of less than sixty cubic feet from any one estate it may be charged for as if it were a full load of sixty cubic feet.

8. When any privy vault or any cess-pool is cleaned, the entire contents thereof shall be removed.

9. The city clerk shall issue the licenses when granted by the board of aldermen, the annual fee for which shall be the sum of five dollars, and all licenses shall expire on the 31st day of January in each year. These rules shall be printed on the back of the license issued to each licensee, and the license shall be subject to revocation whenever, in the opinion of the city physician, the apparatus is not proper for the work to be performed in a suitable manner.

10. All rules or parts of rules inconsistent herewith are hereby repealed.

11. These rules shall take effect on and after February 1st, 1899.

The following ordinances were passed during the year:

## CHAPTER 110.

*Passed May 19, 1898.*

## AN ORDINANCE RELATING TO THE REGISTRATION OF DEATHS.

*It is ordained by the City Council of the City of Pawtucket as follows:*

SECTION 1. There shall be appointed as soon as may be after the passage of this ordinance, and annually in the month of February thereafter, by the board of aldermen, a sufficient number of persons to act as undertakers, removable at any time by said board of aldermen for cause satisfactory to them.

SEC. 2. Whenever any person shall die in the city, the physician attending in his or her last sickness shall furnish to the undertaker attending the funeral, or to the city clerk, a certificate giving the name of the person, date of death, and the disease or cause of his or her death.

SEC. 3. No person shall bury or place in a tomb or remove from the city or otherwise dispose of the body of any human being who shall die in the city without first reporting the death to the city clerk and obtaining a permit from him.

SEC. 4. No permit shall be given, as provided in section three, until the city clerk is furnished with the information in relation to the deceased person required by the laws of the state for record, so far as the same can be ascertained, together with the physician's certificate of the cause of death whenever a physician has been in attendance; provided, however, that whenever the body of a person is lying dead in the city who has been unattended by a physician in his or her last sickness, the city clerk shall call upon a registered physician or the medical examiner of the district to inquire into and to certify as to the cause and manner of death, and shall allow to said physician or medical examiner the fee of two dollars, which shall be paid out of the city treasury upon the order of the city clerk; and provided further, that whenever the medical examiner is called and finds upon inquiry, that the case is within the provisions of chapter 287 of the general laws, his services shall be rendered and fees paid in accordance with the provisions of said chapter 287.

SEC. 5. Whenever the body of a human being who has died out of the city shall be brought here for burial, the undertaker or other person attending the funeral shall furnish the report required in section three and four, with the exception of the physician's certificate.

SEC. 6. No undertaker or other person shall bury or cause to be buried the body of any deceased person in the city except in such grounds as are or may be designated as burying grounds and authorized to be used as such.

SEC. 7. Every person violating any of the foregoing provisions of this chapter shall pay a fine of not less than five nor more than twenty dollars for each offence.

SEC. 8. The city clerk shall cause the above ordinance to be published in all the newspapers published in the city in three successive issues of each paper, and shall cause a printed copy of said ordinance to be mailed to each registered physician and undertaker in this city, and to such other physicians and undertakers in nearby towns and cities as he shall deem necessary, and this ordinance shall take effect on and from ten days after its passage.

6. Byron U. Richards, M. D., is the city physician.

7. Gratuitous vaccination was provided during the year, and five hundred seventy-eight vaccinations were so made.

8. Undertakers are prompt in making returns of deaths.

9. Clergymen make returns of marriages promptly, but town clerks from adjoining towns do not.

SAMUEL H. ROBERTS, *City Clerk*.

## PROVIDENCE.

2 and 3. Extract from report of city engineer as below:

6. Charles V. Chapin, M. D., superintendent of health.

7. (See report of Dr. Chapin.)

## WATER WORKS.

The population of the city is estimated at 188,500, and the population supplied in the suburbs is estimated at 14,300. Total population supplied, 202,800.

The number of meters in use in the city is 18,242, and the number of meters in use in the suburbs is 1,596. Total number of meters in use, 19,838.

The number of service pipes in use in the city is 21,390, and the number of service pipes in use in the suburbs is 1,942. Total number of service pipes in use, 23,332.

The average daily use of water per service for the year 1903 has been 562 gallons.

The average daily use of water per capita for the year 1903 has been 65 gallons.

The water receipts for 1903 were \$621,016.74.

The net cost of maintenance for 1903 was \$130,199.63.

The net cost of the water works construction from November 8, 1869, to January 1, 1904, is \$6,569,925.22, upon which there has been a revenue for water sold of \$11,238,357.15.

The monthly and annual and the average daily and monthly consumption of water in gallons, including waste and leakage, during the year, is shown by the following table:

MONTHS.	Consumption per month.	Average monthly consump- tion.	Average daily consumption per month.	Average daily consumption for the year.
January.....	398,091,151	.....	12,841,650	.....
February.....	353,314,762	.....	12,618,384	.....
March.....	369,677,008	.....	11,925,065	.....
April.....	370,021,077	.....	12,334,036	.....
May.....	431,517,908	.....	13,919,933	.....
June.....	390,451,085	.....	13,015,036	.....
July.....	419,828,786	.....	13,542,864	.....
August.....	400,294,087	.....	12,912,712	.....
September.....	412,711,953	.....	13,757,065	.....
October.....	405,862,993	.....	13,092,355	.....
November.....	416,839,677	.....	13,894,656	.....
December.....	418,223,718	.....	13,491,088	.....
Total.....	4,786,834,205	.....	.....	.....
Averages.....	.....	398,902,850	.....	13,114,614

The maximum consumption of water for any one day during the year 1903 was 16,831,300 gallons.

The amount of water consumed shown in the above table includes the supplying of about forty-one and four-tenths miles of distribution pipes, located in adjoining towns, as well as supplying the greater part of the State Institutions at Cranston. The new filtration plant at Pettaconset has used, and will require, a considerable quantity of water. Dexter Asylum has continued to use a considerable quantity of water, as usual, which, together with the use of water in the cold months through small blow-offs at bridge crossings and elsewhere, to prevent freezing, helps to keep up the consumption.

The work on the filtration plant has progressed somewhat slowly, owing to many causes. Four of the six beds have been finished, and the main collector laid in each. The foundations of the pumping station are all in and are ready for the superstructure. Nearly all of the conduits are in place, including the main clear water conduit under the river. A large amount of time and effort has been spent in the attempt to produce the exact quality of sand required, and when that is done the work will proceed much faster.

The investigations in relation to electrolysis have been continued; several breaks in services and small mains have occurred, one of which, in a four-inch cast-iron service pipe, is shown in the accompanying illustration. The trouble with several meters located near tidewater and affected thereby has continued, bolts have had to be renewed and leaks in the connecting pipes repaired. The district they are in has changed from positive to negative and part way back again during the year, showing that the conditions are not permanent, but are dependent in a



large degree upon the efforts of the traction company to return the current to the power station.

### WATER WORKS STATISTICS FOR THE YEAR 1903.

IN ACCORDANCE WITH FORM ADOPTED BY THE NEW ENGLAND WATER WORKS ASSOCIATION.

#### *Providence Water Works, Providence County, R. I.*

Population of Providence,	188,500
Estimated population supplied in suburbs,	14,300
Date of construction,	1870 to 1876.
By whom owned,	City of Providence.
Source of supply,	Pawtuxet river, in the town of Cranston.
Mode of supply,	

The water is pumped from the Pawtuxet river into a storage reservoir located upon a hill about one mile distant. From this reservoir it flows into the city by gravitation, directly supplying a second storage reservoir within the city limits, and also that portion of the city which is of sufficiently low elevation to be served by gravitation. To supply that part of the city of too high an elevation to be served by these reservoirs, a third reservoir is located in the town of North Providence. The water is pumped by supplementary pumping machinery from the second reservoir above mentioned or from the mains, into the high service reservoir. This supplementary pumping machinery can also supply the high service district, if the reservoir should be out of service, by pumping directly into the mains.

In addition to the regular distribution pipes there is an independent high pressure fire system (deriving its supply from the high service), for protecting an area of about one-half of one square mile in the centre of the business portion of the city.

#### PUMPING.

##### 1. Builders of pumping machinery:

- a. Worthington Duplex engine, built by Henry R. Worthington. (Out of service.)
- b. Cornish engine, built by Paulding, Kemble & Co.
- c. Corliss Vertical engine, built by George H. Corliss.
- d. Worthington Triple Expansion engine, built by Henry R. Worthington.
- e. Nagle High Service engine, built by the Providence Steam Engine Co.

<i>f.</i> Holly High Service engine, built by the Holly Manufacturing Co.		
Worthington	Corliss.	Holly
Triple		High
Expansion.		Service.
2. Description of coal used,		
<i>a.</i> Bituminous.		Anthracite egg,
Bituminous.		pea and
		No. 2 and 3 buckwheat.
<i>b.</i> George's Creek	George's Creek	
Cumberland,	Cumberland,	
Pocahontas and	Pocahontas and	Beaver Meadow,
New River.	New River.	Pittston and Scranton.
<i>c.</i> Price, per gross ton delivered,		
\$5.22	\$5.59	\$4.37
<i>d.</i> Percentage of ash,		
9.6	13.8	22.5
<i>e.</i> Wood, price per cord,		
\$4.50	\$4.50	\$4.94
<i>f.</i> Oil, price, \$0.0375 per gallon.		
3. Coal consumed for the year, in pounds,		
*5,358,840	†537,900	1,254,944
4. [Pounds of wood consumed] ÷ 3 = equivalent amount of coal in pounds,		
167	5,500	1,831
4a. Amount of other fuel used,		
262,975 gallons	.....	.....
of fuel oil, January 1 to May 4.		
5. Total equivalent coal consumed for the year, (3) + (4) in pounds,		
*5,359,007	543,400	1,256,775
6. Total pumpage for the year in gallons, with allowance for slip,		
1,555,605,065 to May 4.	335,656,058	569,976,223
2,941,989,468 after May 4.		
Worthington.	Corliss.	Holly.
7. Average static head against which pumps work, in feet,		
170.99 May 4 to Dec. 31	171.53	112.48
8. Average dynamic head against which pumps work, in feet,		
176.80 May 4 to Dec. 31	177.80	127.96
9. Number of gallons pumped per pound of equivalent coal (5),		
549 May 4 to Dec. 31.	618	454

\*May 4th to December 31.

†Not including 36,300 pounds when engine was not in service.



$$10. \text{ Duty} = \frac{\text{Gallons pumped (6)} \times 8.34 \text{ (lbs.)} \times 100 \times \text{dynamic head (8)}}{\text{Total fuel consumed (5).}}$$

80,947,800 May 4 to Dec. 31.                      91,595,200                      48,399,300

COST OF PUMPING, FIGURED ON PUMPING STATION EXPENSES, VIZ.: \$35,952.19 FOR THE LOW SERVICE, AND \$6,467.08 FOR THE HIGH SERVICE.

11. a.	Per million gallons pumped into low service reservoir, the cost was.....	\$7.44
b.	Into high service reservoir (pumped twice, \$7.44 + \$11.35).....	\$18.79
12.	Per million gallons raised one foot high (dynamic), low service, the cost was.....	\$0.0420
	High service (pumped twice, \$0.042+\$0.0887), the cost was.....	\$0.1307
O.	Net cost of works to date.....	\$6,569,925.22
P.	Bonded debt at date.....	\$6,009,000.00
P <sup>1</sup> .	Floating debt at date.....	\$93,000.00
Q.	Value of sinking fund at date.....	\$1,562,158.44
R.	Average rate of interest.....	\$0.0375+

#### CONSUMPTION.

1.	Estimated total population of district at date.....	202,800
2.	{ Estimated population on lines of pipe, }	Number not taking city water so small that total population is used.
3.	{ Estimated population supplied, }	
4.	Total number of gallons consumed for year.....	4,786,834,205
5.	{ Passed through meters, }	Estimated about 60 per cent.
6.	{ Percentage of consumption metered, }	
7.	Average daily consumption in gallons.....	13,114,614
8.	Gallons per day to each inhabitant.....	65
10.	Gallons per day to each tap (distribution 22).....	562

#### DISTRIBUTION.—MAINS.\*

1.	Kind of pipes used.....	Cast iron.
2.	Sizes.....	From 6 to 36 inches.
3.	Extended.....	30,315.22 feet.
4.	Discontinued.....	2,634.30 feet.
5.	Total now in use†.....	341.3986 miles.

\*Not including high pressure fire service.

†Includes 10,084 feet of 36-inch pipe, 561 feet of 30-inch pipe, and 695 feet of 24-inch pipe, which are force mains, and 19.66 feet of 30-inch pipe, and 19,478.46 feet of 24-inch pipe, which are used both as a force and delivery main.

7. Number of leaks for year, 20; 18 of which were joints (13 being due to settlement), 2 cracked pipe, repairs costing.....	\$111.30
8. Small distribution pipes, less than four inches, total length.....	None.
9. Fire hydrants added*.....	29
10. Number of hydrants now in use, * (a) fire.....	1,989
(b) watering cart hydrants or street sprinklers.....	64
(c) car sprinkler hydrants.....	21
11. Stop gates added.....	76
12. Number now in use.....	3,606
13. Stop gates less than four inches.....	None.
14. Number of blow-off gates.....	32
15. Range of pressure on mains at centre of city for day and night.....	64 to 73 lbs.

## HIGH PRESSURE FIRE SERVICE.

Kind of pipes used.....	Cast iron.
Size.....	12, 16, and 24-inch.
Total now in use.....	5.5698 miles.
Hydrants added.....	None.
Number now in use.....	92
Stop gates now in use.....	31
Number of blow-off gates.....	4
Pressure on mains at centre of business portion of city, for day and night.....	114 lbs.

## SERVICES.

16. Kind of pipe.....	Lead from $\frac{1}{2}$ to $1\frac{1}{4}$ inches, and cast iron.
17. Sizes.....	From $\frac{1}{2}$ to 10 inches.
21. Services added.....	579
22. Number now in use.....	23,332
25. Meters added.....	622
26. Number now in use.....	19,838
27. Percentage of service metered.....	85
29. Elevator supplies added.....	7
30. Number now in use, 156 of 4 and 6-inch, and 20 smaller supplies connected to house elevators	

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\*Not including high pressure fire service, or private hydrants.

## REMARKS.

The Cornish engine was not run during the year.

The Worthington Duplex engine was not run during the year. (Out of service.)

The Corliss Vertical engine was run on 100 days.

The Worthington Triple Expansion engine was run on 365 days.

The Nagle engine was not run during the year.

The Holly engine was run on 305 days.

The work relating to this department has been in charge of Irving S. Wood, assistant engineer.

## SEWERS.

It was originally designed to drain the West river district, in the neighborhood of Geneva and Wanskuck, by a sewer following the course of the West river from Wanskuck to its junction with the Moshassuck river near the Allen Print Works, but to get rid of exorbitant charges for rights of way, and to avoid lengthy and expensive litigation, which was threatened, it was decided to attain the same object by a tunnel under Branch avenue, from the Moshassuck river to Wanskuck. This tunnel is 3,953.66 feet in length, with an inside diameter of 48 inches, the form of construction being shown on accompanying plan and section. About 1,400 feet of the excavation was in dry sand and gravel, the remainder in quicksand. The excavation was by means of a shield pushed forward by hydraulic jacks, the whole the design of Mr. Charles A. Haskins, of Boston. This shield was 6 feet 4 inches in diameter on the outside and was made in twelve segments bolted together, the whole weighing four and one-half tons, and was pushed forward by six hydraulic jacks worked by a pump capable of developing a pressure of six thousand pounds per square inch. The pressure used varied from 2,500 to 3,500 pounds. The manner of operating the shield and of placing the wooden lagging, which was used to preserve the excavation on advance of the brick work, is seen on accompanying plan and section. In the part where quicksand was found, an air pressure of from twelve to fourteen pounds was used; where the excavation was wet, but not of a quicksand nature, two to four pounds was enough to hold back the water. The average progress was 9.1 feet per day. The largest day's work was 40 feet in 22 hours, or two shifts, work being carried on in two shifts of eleven hours each. Besides the shield, the working plant comprised one 60 H. P. boiler, one hydraulic pump, three pressure fans, two Knowles and one Davidson compressors, two hoisting engines, dump cars, track, and two derricks.

The work done at the sewage pumping station on Ernest street is shown by the statistics below.

Total amount pumped for the year is estimated at 7,073,903,808 gallons, at a

total outlay for labor, fuel, work in screen chamber, and all other charges, of \$16,534.46, or \$2.3374 per million gallons pumped, or \$0.08737 per million foot gallons pumped.

Daily average for the year.....	19,380,421 gallons.
Daily average for wet weather, or days in which the rainfall was enough to visibly affect the quantity pumped.....	28,838,494 gallons.
Daily week-day average for dry weather.....	18,166,088 gallons.
Sunday average for dry weather.....	11,025,623 gallons.
Difference, almost entirely manufacturing waste.....	7,140,465 gallons.
Days on which a measurable quantity of rain fell, but not enough to visibly affect the pumping.....	97
Days on which the pumping was visibly affected.....	49
Days on which no rain fell.....	219

The work at the precipitation plant the past year has progressed successfully. The estimated amount of sewage passing through the tanks was 7,439 million gallons, including storm water.

The amount of sludge pumped into the reservoirs was 34,867,000 gallons. The amount of sludge pressed (with 16 presses) was 28,499,000 gallons. The presses were emptied 24,632 times, producing 27,712 tons of sludge cake. The presses were in operation 2,381 1-2 hours.

## SUMMARY OF PURIFICATION STATISTICS.\*

### CHEMICAL PRECIPITATION.

1. Population in 1900, 175,597; in 1903, 188,500.
2. Population served by sewers, about 170,000 (estimated).
3. Length of sewerage system in miles: Combined, 196.278; storm sewers, 7.50.
4. Character of sewage: Manufacturing, wool washings, jewelers', dyeing and bleaching wastes, etc.
5. Strength of average sewage (parts per 100,000): Albuminoid ammonia, total 0.675; suspended, 0.377; chlorine, 60.15.
6. Daily flow of sewage in million gallons: Maximum, March 23, 56.684; minimum, May 15, 7.294; average for year, 20.38.
7. Average daily flow of sewage treated: 20,380,000 gallons.
8. Pounds of lime used per million gallons of sewage: 606.
9. Other chemicals used: Copperas, 65 pounds per million gallons.
10. Cubic contents of settling basins up to water surface, when in use, in million gallons: 11.13.

11. Per cent. organic matter removed from sewage in terms of albuminoid ammonia: total, 49.80; suspended, 82.54.

12. Disposition of effluent: Discharge into Providence river off the end of Field's Point under 36 feet of water.

13. Volume of sludge produced in gallons per million gallons of sewage treated: 4,776.

14. Per cent. of solids in sludge: 5.37.

15. Method of sludge disposal: Pressed and cake hauled by steam train to dump one-eighth of a mile away.

16. Cost of treatment per million gallons of sewage: Chemical precipitation, \$3.31; sludge disposal, \$2.44.

#### SLUDGE PRESSING.

1. Average number of gallons pressed per day: 95,600.

2. Per cent. of solids in wet sludge: 5.37.

3. Pounds of lime added per thousand gallons of sludge: 23.6.

4. Description of machinery used: Sludge pumped by Shone ejectors (2-500 gall.) to storage reservoirs; thence by gravity to forcing receivers (4-8 ft., dia. x 12 ft.); thence forced under 60-80 lbs. pressure per square inch up into the presses. The ejectors and forcing receivers are run by air pressure generated by a 150 and a 50 H. P. air compressor actuated by electric motors; 16 filter presses are used, each with from 43 to 54 plates, with six-inch centre holes, forming cakes 36 inches square and from  $1\frac{1}{4}$  inch to  $\frac{3}{4}$  inch thick, between filter cloths which surround the plates.

5. Hours of operation of machinery daily: Ejector, 6.5; presses, 7.6.

6. Pounds of coal used per day: Coal used only for heating buildings.

7. Tons of sludge cake produced daily: 76.

8. Per cent. of solids in cake: 28.25.

9. Tons of solids in sludge cake produced daily: 21.4.

10. Cost of operation per ton of solids: \$2.27.

Quantities per day in above table calculated on basis of 365 days' work.

The work relating to this department has been in charge of John E. Bowen, assistant engineer.

#### PUBLIC PARKS.

The total area of public parks in the city is 570 acres.

The number of parks is nineteen.

OTIS F. CLAPP, *City Engineer.*

## SCITUATE.

No reply from the town clerk.

## SMITHFIELD.

1. Nothing for the promotion of the public health has been done during the year.

(Nuisance and contagious disease ordinance, see report of 1894, p. 48.)

5. This town has no legal board of health other than the town council.

6. Jencks Smith is the health officer.

7. Gratuitous vaccination was not provided during the year.

8. Undertakers are prompt in making returns of deaths.

9. Clergymen make returns of marriages promptly.

OSCAR A. TOBEY, *Town Clerk.*

## WOONSOCKET.

1. Nothing for the promotion of the public health has been done during the year.

2. There are 35.474 miles of water mains in this city.

3. The aggregate length of sewers in this city is 5.87 miles and about one-half the population is connected therewith.

The following extracts are from the report of the city engineer, Frank H. Mills:—

## FILTER BEDS.

Plans, specifications, contract and contract drawings were prepared for an additional filter bed, and on October 16th the sewer commissioners awarded the contract for building the bed to the Globe Coal Company of this city. Work was commenced on October 30th, but it being so late in the season but little work could be done before cool weather set in: The bed will undoubtedly be finished early next spring.

Analysis of sewage and effluent have been made by the State Board of Health. (The results will be found in the tables relating to sewage analyses, in the body of this report.)

The percentage of removal of impurities as shown by the yearly averages is:

Free ammonia.....	87.1 p. c.
Albuminoid ammonia.....	90.6 p. c.



Carbonaceous matter as shown by oxygen consumed.....	89.8 p. c.
Bacteria.....	96.6 p. c.

These results are not as good as those for the past two years, owing to the beds being forced and to the coarse sand used in resurfacing the beds last season.

Mr. Gardner T. Swarts, secretary of the State Board of Health, has written me as follows: "The working of the beds in the purification of the sewage on the whole is very good." He also says: "The effluent, however, which is discharged into the river shows a high percentage of purification, and in color and appearance would serve to dilute the contaminating waters of the streams into which the effluent flows. The color is, in fact, many shades better than that of the supply of drinking water furnished by your city to its consumers."

It will be noted that in the analysis of the sewage the determinations under "residue on evaporation" that "in solution" and "in suspension" have been given this year in place of "loss on ignition" and "fixed residue," as given last year, in order to give a more exact analysis.

Inasmuch as there is comparatively no suspended matter in the filtered sewage, or effluent from the beds, the same determinations have been given as last year, namely, "Loss on ignition" and "fixed residue."

The average area of the filter bed to which the sewage is applied is about one-half acre and the average dose for the past year has been about 460,000 gallons, or at the rate of 920,000 gallons per acre. This dose has been applied to each bed one day in four.

5. This city has no legal board of health other than the board of aldermen.
6. William C. Munroe, M. D., is the health officer.
7. Gratuitous vaccination was provided during the year.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen do not make returns of marriages promptly.

WILLIAM C. MASON, *City Clerk.*

## WASHINGTON COUNTY.

### CHARLESTOWN.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.

4. There have been no new sanitary ordinances adopted during the year. (Contagious disease ordinances, see report of 1900, p. 56.)
5. This town has no legal board of health other than the town council.
6. Milton Duckworth, M. D., is the health officer.
7. Gratuitous vaccination was not provided during the year.
8. Undertakers make prompt returns of deaths.
9. Clergymen make returns of marriages promptly.

GEORGE C. CROSS, *Town Clerk.*

#### EXETER.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.
4. No new sanitary ordinances were enacted during the year.
5. This town has no legal board of health other than the town council.
6. This town has no health officer.
7. Gratuitous vaccination was not provided during the year.
8. Undertakers are not prompt in making returns of deaths.

JOHN H. EDWARDS, *Town Clerk.*

#### HOPKINTON.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.
- (Contagious disease ordinances, see report of 1894, p. 59.)
5. This town has no legal board of health other than the town council.
6. Henry H. Crandall is the health officer.
7. Gratuitous vaccination was not provided during the year.

EDWIN R. ALLEN, *Town Clerk.*



## NARRAGANSETT.

1. Nothing for the promotion of the public health has been done during the year.
2. There has been no extension of the public water service of this town during the year.
3. There has been no change in the sewage system of this town since the previous year.
4. No new sanitary ordinances were enacted during the year. (Ordinance in reference to sewers, see report of 1901, p. 47.)
5. This town has no legal board of health other than the town council.
8. Undertakers are fairly prompt in making returns of deaths.
9. Most of the clergymen make returns of marriages promptly.

W. HERBERT CASWELL, *Town Clerk.*

## NORTH KINGSTOWN.

1. Nothing for the promotion of the public health has been done during the year.
2. This town has no public water service.
3. This town has no sewage system.
4. No new sanitary ordinances were enacted during the year. (Nuisance and contagious disease ordinances, see report of 1896, p. 60.)
5. This town has no legal board of health other than the town council.
6. Harold Metcalf, M. D., is the health officer.
8. Undertakers are prompt in making returns of deaths.
9. Clergymen make returns of marriages promptly.

THOMAS J. PEIRCE, *Town Clerk.*

## RICHMOND.

No reply from the town clerk.

(Contagious disease and nuisance ordinance see report of 1894, p. 61.)

## SOUTH KINGSTOWN.

1. Nothing for the promotion of the public health has been done during the year.

4. The only new ordinance governing sanitation passed during the year is as follows:

#### AN ORDINANCE IN RELATION TO NUISANCES.

Passed April 28, 1903.

It is ordained by the town council of the town of South Kingstown as follows:

SECTION 1. Every person who shall put, place, throw or deposit in any public street or highway, in this town, any animal or vegetable matter, offal or refuse from peddlers' carts shall pay a fine of not less than two dollars nor more than twenty dollars for every such offence.

(Contagious disease ordinance, see report of 1896, p. 64.)

6. Herbert W. Fison is the health officer.

8. Undertakers are fairly prompt in making returns of deaths.

9. Clergymen make returns of marriages promptly.

HOWARD B. PERRY, *Town Clerk.*

#### WESTERLY.

No return from town clerk. (Ordinances: Report of 1895, p. 65.)

The following extracts are taken from the report of the board of water commissioners, year ending April 30, 1903:

The monthly analyses of the water supply by the State Board of Health show a high standard of purity, and while cities and towns throughout the country are struggling with the pollution, filtration, etc., of their water supplies, our citizens are to be congratulated that the conditions are such as to enable them to enjoy practical freedom from the consequent dangers of a polluted water supply, and the expense incident to modern methods of filtration.

#### SUMMARY OF STATISTICS PRESENTED IN ACCORDANCE WITH SUGGESTIONS ADOPTED BY THE NEW ENGLAND WATER WORKS ASSOCIATION.

By whom owned.....	Town of Westerly.
Works built by company in.....	1886-87.
Purchased by town of Westerly.....	1897:
Source of supply.....	Driven wells.
Mode of supply.....	Pump to tank.
1. Builder of pumping machinery, Henry R. Worthington.	
2. Description of coal used, George's Creek, Cumberland.	
3. Coal consumed for the year, 1,166,290 pounds.	

4. Total pumpage for the year, in gallons, 221,053,500.
5. Average static head against which pumps work, 195.
6. Average dynamic head against which pumps work, 210.
7. Number of gallons pumped per pound of coal, 191.
8. Duty,  $= \frac{\text{Gallons pumped (4)} \times 834 \times 100 \times \text{dynamic head (6)}}{\text{Total fuel (3) no allowance.}} = 33,450,000.$
9. Pounds of coal per million gallons pumped, 5,276.  
Cost of pumping, figured on pumping station expenses. . . . . \$4,695 .52
10. Per million gallons, raised against (dynamic) head in tank. . . . \$21 .24
11. Per million gallons, raised one foot high (dynamic). . . . . \$0.101
12. Cost of pumping, figured on net maintenance. . . . . \$19,981 .26
13. Per million gallons, raised against (dynamic) head into tank. . . \$90 .39
14. Per million gallons, raised one foot high (dynamic). . . . . \$0 .43

## CONSUMPTION.

1. Estimated total population, Westerly. . . . . 8,000  
Estimated total population, Pawcatuck. . . . . 3,500
2. Estimated population on lines of pipe. . . . . 10,000
3. Estimated population supplied to date. . . . . 9,000
4. Total gallons consumed for the year. . . . . 221,053,500
5. Average daily consumption in gallons. . . . . 605,300
6. Gallons per day to each inhabitant (2). . . . . 60
7. Gallons per day to each consumer (3). . . . . 67
8. Gallons per day to each tap (services 4). . . . . 440



REPORTS OF  
HEALTH OFFICERS.

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1903.



# CIRCULAR TO HEALTH OFFICERS.

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## CIRCULAR No. 131.

OFFICE OF THE SECRETARY OF THE STATE BOARD OF HEALTH,

PROVIDENCE, January 1, 1904.

*To the Health Officer:*

DEAR SIR:—An important feature of the annual reports of the Rhode Island State Board of Health is that of giving a connected history of the occurrence of contagious and epidemic diseases from year to year, as they may have prevailed in the different towns, whether epidemically or in a less degree, together with the location in the town (village or otherwise), and season of the year.

If the **proportion** of the **fatal** cases to the **whole number** of cases of the same **disease** could be given, the value of such reports would be very much enhanced. Such proportion can be ascertained only in such towns as *by town ordinance* require physicians to report all cases of such diseases as come within their charge.

An approximate proportion can, however, be given, after the subsidence of the disease, by inquiry of persons living in the immediate neighborhood of the prevalence of such disease, as to the number of the sick, or by house to house visitation where the sickness occurred, with the same inquiry, and by the comparison of the deaths with recoveries as so ascertained.

It is for the purpose of obtaining such information, in full or approximate, and also what may have been done to prevent and restrict diseases, that the questions in the inclosed circular are sent to the various health officers of the State.

To Health Officers who are not physicians, it may be said that the term **epidemic** within the meaning of the questions proposed, is the prevalence of some disease to the extent of one or more persons affected with the disease to every five or six persons living in adjacent tenements or in the near neighborhood, or a smaller proportion, not less than one case of the disease in every ten or

twelve of the population, extending over a large area of territory. One sick in every twelve to sixteen persons might be called a **large prevalence**, and one sick in every twenty to twenty-five, a **moderate prevalence**. The number of cases of any one disease may have to be estimated, but make them as nearly correct as possible.

**If, therefore, you will have** the kindness to reply to the questions in the said circular, according to the best knowledge you have been able to obtain, and forward in the inclosed stamped envelope, you will favor one of the most important interests in the State, and greatly oblige,

Yours truly,

GARDNER T. SWARTS,

*Secretary State Board of Health.*

### CIRCULAR No. 132.

DEAR SIR:—Replies to the following questions, as suggested in the accompanying circular (No. 131), are respectfully solicited; said replies to be made on this circular, following each question:

1. Name of town.

2. Name of health officer.

3. Have there been, within your knowledge, any epidemics, or any large prevalence of contagious or infectious diseases in your town during the past year? If so, of what disease or diseases? in what locality or localities? how many of each disease?\* number of deaths? and in what months of the year?

Diseases.	Locality.	No. of cases.	No. of deaths.	Months in which they occurred.

4. Was isolation maintained or attempted?\*

5. What proportion of the sick, if any, were isolated?

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\* According to the best knowledge obtainable.



6. Was any inspection of premises made, where sickness prevailed, as to the sanitary condition of the cellars, pantries, sinks, sink-drains, water-closets, if any, cess-pools, out-house privies, distance of wells from accumulations of filth, etc., etc.? If so, please give a general statement as to whether they were sanitarily in conditions good or bad, or, if any thing or place was unusually unsanitary, give a full description. Or, if the cause of any outbreak of disease was found, please state what.

7. Did you make any sanitary inspections during the past year, by order of the town council or from your own option? If so, what were they and how made?

8. Do you know of any location in your town that seems to be particularly unhealthy to any considerable number of persons? If so, and the cause is suspected, can such cause be removed at any reasonable expense?

9. Do you report to your town council nuisances dangerous to the public health, or unsanitary premises within your knowledge; or of buildings unsafe for occupants in case of fire? (See Chapter 495, Section 6, Public Laws.)

10. Has there, to your knowledge, been any contamination of any of the water, milk, or ice supplies in your town?

11. Please give names and addresses of dealers in ice in your town.

## REPORTS OF HEALTH OFFICERS.

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### BRISTOL COUNTY.

1. BARRINGTON.

2. Samuel F. Bowden, health officer.

3. The contagious diseases reported during the year were seven cases of scarlet fever at Barrington Centre, and ten cases of measles at Hampden Meadows. None of these cases resulted fatally.

4. Isolation was maintained.

5. All of the sick were isolated.

6. Inspections of premises where sickness prevailed were made, but nothing of an unsanitary nature could be found.

7. Three sanitary inspections were made during the year. The first was at Drownville, where the water-closet and sink connected with the cess-pool without trap in sink pipe. The cess-pool was ordered cleaned and trap put in pipe, which was done. The second case was at Hampden Meadows, where dumping had been carried on near a well; and the third case, seen in attendance with a physician, was the inspection of a pile of sea-weed near a public highway. Both these nuisances were ordered abated, and were attended to.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. E. Tiffany, of Barrington Centre, and William A. Leonard, of Drownville, are the ice dealers of this town.

1. BRISTOL.—No report from the health officer.

1. WARREN.

2. George L. Drown, health officer.

3. There was no large prevalence of contagious diseases reported during the year. Those reported were one case of typhoid, four of diphtheria, and nineteen of scarlet fever. The last-mentioned cases were not confined to any particular section of the town and were distributed throughout the year. There was apparently no communication of contagious disease from family to family.

4. Isolation was quite generally maintained, but no strict quarantine was maintained. It is not probable that there was any spread of contagious disease by reason of lack of isolation.

6. Inspections of premises where sickness prevailed were always made, but in no case was it found evident that the disease was caused by unsanitary conditions.

7. A number of sanitary inspections were made during the year. These consisted mainly of the inspection of privies and cess-pools.

8. No unhealthy localities in this town are known.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. Tanner Brothers of this town; E. Tiffany, of Barrington Centre; and William A. Leonard, of Drownville, are the ice dealers of this town.

## KENT COUNTY.

1. COVENTRY.

2. John Winsor, M. D., health officer.

3. There were no epidemics in this town during the year, although several cases of small-pox were reported.

4. Isolation was maintained.

5. All of the sick were isolated.

6. Inspections of premises in cases of diphtheria and typhoid were made.

7. No sanitary inspections were made during the year.

8. No unhealthy localities in this town are known.

9. Public nuisances and unsanitary premises are not reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. Manchester Brothers, W. G. Lewis, and Daniel Wood are the ice dealers of this town.

## 1. EAST GREENWICH.

2. Elbridge G. Carpenter, M. D., health officer.

7. Sanitary inspections of cess-pools, water-closets, etc., were made, because of complaints of neighbors.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. E. A. Sweet is the ice dealer of this town.

WEST GREENWICH has no health officer.

1. WARWICK.—No report from the health officer.

(Some small-pox cases in town.)

## NEWPORT COUNTY.

1. JAMESTOWN.—No report from the health officer.

1. LITTLE COMPTON.—No report from the health officer.

## 1. MIDDLETOWN.

2. George E. Ward, health officer.

3. There were no epidemics in this town during the year.

4. Isolation was always maintained.

5. All cases of contagious disease reported were isolated.

6. Inspections of premises where sickness prevailed were not made.

7. No sanitary inspections were made during the year.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. There are no ice dealers in this town.

## 1. NEWPORT.

2. J. W. Sampson, executive officer, board of health.

3. There were no epidemics in this city during the year.

6. Inspections in all houses where diphtheria and typhoid existed were made, and about sixty per cent. showed unsanitary plumbing.

The following extracts are taken from the report of the board of health:

The general health of the city has been good throughout the year. No serious epidemic has visited us.

The question that has most seriously engaged the attention of the Board during the year has been the persistent appearance of diphtheria in all parts of the city. The cases have been so scattered that at no time was an outbreak of the disease seriously feared.

When the present Board was organized it found no adequate regulations for the prevention of the spread of contagious diseases. Even *now*, the means are not wholly adequate.

In November, 1902, your honorable body passed a health ordinance. As a result of this ordinance strict regulations regarding diphtheria were put in force. The promulgation of quarantine rules met with considerable opposition, and even now they do not receive the support their results merit.

One of the essentials for the prevention of the spread of contagion is the early knowledge of its existence. This, together with its origin, and a proper isolation are the chief factors of the problem. The source of the disease is located if possible by our efficient inspectors, and its further mischief stopped.

The early and exact determination of the disease is had by bacteriological tests. In December last the Board employed a bacteriologist. The result of the year's work amply justifies this step. Many cases have been detected in this way, that otherwise would have passed unnoticed, leaving behind them fruitful sources of contamination.

The work of the bacteriologist is already shown in the decreased percentage of mortality, and it is reasonable to expect a material decrease during the coming year in the number of cases. This bacteriological work has been a great assistance in the early and correct diagnosis of diphtheria resulting in inestimable value to our people.

The only thing lacking to make our machinery complete is a better control of quarantine regulations. These are as good as the means at hand will permit. If it was the duty of our police, as it is in many other places, to co-operate with the officers of the Board in assuring the integrity of quarantine, much assistance would be gained.



From the number of cases reported of scholars attending the Clark street school and the Trinity Sunday School it was feared these buildings might be sources of contagion. An examination of the Clark street building, however, revealed nothing, and the discovery of the source of contagion in another place removed all suspicion from both of these premises.

The city should have, at least partly under its control, a place for the care of contagious cases. Perfect quarantine could be had and much suffering and death prevented were such a place at the disposal of the Board. We impress upon your honorable body the necessity of providing such a place.

The same care has been exercised in the prevention of the spread of scarlet fever as has been detailed for that of diphtheria. The wisdom of requiring an examination by the medical officer of the Board before the discharge of these cases has been many times justified by the detection of dangerous desquamation after the attending physician has declared the case cleared. The need of hospital accommodation for scarlet fever cases is emphasized.

The Board has made material progress during the year in abolishing dangerous vaults and wells, fruitful sources of typhoid fever. Much remains to be done in this direction. There are still far too many dangerous vaults and wells in use in the older parts of the city and only the closest vigilance will keep down the typhoid record to the standard of the present year.

During the year 1902 the Board established a place on Brigg's Wharf for the disposal of night-soil and we are pleased to report that this has worked to our entire satisfaction. No night-soil is now permitted to be dumped on land.

It was formerly the custom of the city to dispose of dead animals at sea. The arrangement entered into with Mr. H. F. Copeland during the year 1901 for the care of such animals has been entirely satisfactory. Owing to orders of the transportation companies he will be unable to continue his work during the summer months entirely without expense to the city and it will probably become necessary for the city to contract with him for the disposal of animals during these months. This expense will not be heavy. In our opinions it will be a proper one for the city to incur, as this method of disposal will be less expensive in the long run and is entirely free from the objection to the old method of disposal.

Antitoxin is now used, not only as a curative but as a preventative of diphtheria and the Board has been liberal in supplying it, free of expense, to all physicians. This early and free use of antitoxin has removed the dread of diphtheria and reduced the mortality to a very low percentage. The importance of the value of the early use of antitoxin in the treatment of diphtheria led the Board to place its executive officer, who has the antitoxin in his care, in telephonic communication with the physicians of the city so that this serum can be had on emergency calls at any time.

The collection of ashes was transferred from this Board to the Committee on Streets and Highways the first of the year. The collection of swill has been so systematized as to reduce the number of complaints very materially. The number for the year ending December 31st, 1903, being one hundred and eighty-six (186) as compared with ten hundred and eighty-five (1,085) for the year 1901.

A number of complaints were received during the summer, alleging that the city's swill was being washed upon the shores in different parts of the bay. A series of careful investigations convinced this Board that the city was not at fault and that the principal cause of complaint was the government establishments and yachts.

Examination of the city water has been made at frequent intervals. While analysis shows no obnoxious bacteria yet it is far from being a first class drinking water owing to the disagreeable taste and odor at certain times, due to an excessive amount of algæ, the result of too shallow storage basins.

This Board has acted in conjunction with a committee from your honorable body in building and equipping an emergency hospital, which has been completed and by a resolution has been turned over to the care and custody of this Board.

#### SUMMARY.

The following is a summary of the work done by this department:

Forty-five regular and four special meetings have been held during the year.

Monthly mortality reports have been issued each month and exchanged with other boards of health throughout the country.

One hundred and seventy-one fumigations have been made.

Five hundred and sixty-three packages of antitoxin have been given out, representing 1,054,000 units.

The following bacteriological work has been done:

Three hundred fifty-six diphtheria cultures were examined; of this number 150 were diagnostic cultures and 206 discharge cultures. Of the diagnostic cultures 80 proved positive and 70 negative. Of the discharge cultures 70 proved positive and 136 negative.

Fifty-five examinations were made for the discharge of scarlet fever cases. Of the 36 cases examined, in 22 cases the report of the physician was confirmed, and in 14 cases patients were still desquamating.

Four hundred and fifty-six burial permits were issued, of this number 312 were local and 112 transit permits.

Permits have been issued for the cleaning of 942 privy vaults, 33 cess-pools, and 17 grease traps.



Five thousand eight hundred seventy-four inspections have been made, and the following nuisances abated by orders of this Board:

Three hundred and twelve privy vaults cleaned; 84 privy vaults abolished; 21 sinks provided with traps; 9 cellars cleaned; 4 houses closed owing to their insanitary condition; 11 waste pipes cleared; 9 yards cleaned; 6 cellar drains cleared; 3 stables provided with manure pits; 2 stables connected with drains; 2 ice boxes connected with the sewer; 4 cellar drains provided with traps; 3 water closets ventilated; 3 wells filled in; 10 grease traps and drains cleaned; 1 grease trap provided with a cover; 3 water closets leaking in the cellar; 21 not classified.

The bodies of 703 animals were removed.

8. No unhealthy localities in this city are known.

9. Public nuisances, unsanitary premises, etc., are not reported to the board of aldermen.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this city.

11. The Arctic, Newport, and People's Ice Companies are the ice dealers of this city.

1. NEW SHOREHAM.

2. Hamilton A. Mott, health officer.

3. There were no epidemics in this town during the year.

7. No sanitary inspections were made during the year.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. C. A. Negus, H. S. Millikin, and Fenner Ball are the ice dealers of this town.

1. PORTSMOUTH.

2. Minot A. Steele, M. D., health officer.

3. There were no epidemics in this town during the year. Measles was prevalent during April and May, there being about twelve cases, none of which were fatal.

4. Isolation was not maintained.

5. None of the sick were isolated.
6. No inspections of premises where sickness prevailed were made.
7. A few sanitary inspections were made upon complaint, during the year, and all unsanitary conditons, when any such were found, were corrected.
8. No unhealthy localities in this town are known.
9. All public nuisances, etc., when any such exist, are reported to the town council.
10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.
11. William H. Tallman is the ice dealer of this town.

1. TIVERTON.

2. Edward P. Stimson, M. D., health officer.
3. The contagious diseases reported were four of measles, ten of scarlet fever, four of diphtheria, seven of typhoid fever, and seven of small-pox. These were distributed throughout the different parts of the town.

In reference to the small-pox cases the first case reported in February was reported as probably chicken-pox, as that was the opinion of the case as given by the attending physician, and although she had a high temperature, when the eruption appeared the fever disappeared and she was fully erupted from head to foot. An *expert* was called, and after carefully examining the case he decided that it was a case of chicken-pox of unusually full eruption. The other cases in that family were neither reported to nor seen by the health officer, but the patient's husband, baby, and maid all had the same eruption. The husband was a night engineer, and in the latter part of March a case was reported in the family of the day engineer on the same work. This case was markedly one of the disease. Investigating the former cases with the Secretary of the State Board of Health, it was decided that the former cases were also of this malady. The maid of the first patient had returned home for two or three weeks previously, and at the time she was seen by the Secretary of the State Board of Health and the health officer she was "scabbing" the family. She was quarantined, and although she had while in this state been to church, dances, and other public places, and had slept all the time at home with two other unvaccinated sisters, no other case occurred.

The other cases in June were imported from Fall River by a party who, finding that the health board of that city was looking up cases in his block, removed them by night to the east part of this town, where they were traced, quarantined,

and afterwards fumigated, and he paid all bills connected therewith so far as the town was concerned.

Referring to the last-mentioned cases, it seems desirable to the health officer of this town, since we have no law which will prevent a person from knowingly importing into this State cases of contagious diseases, that such a law, with a penalty sufficient to discourage such action should be enacted.

4. All cases of measles, scarlet fever, and diphtheria were directed isolated, and in families where this direction was carried out no other cases occurred.

5. About sixty per cent. of the sick were isolated.

6. Inspections of premises where sickness prevailed were made, and sanitary conditions were usually found good.

7. All sanitary inspections made during the year were at the option of the health officer.

8. No unhealthy localities in this town are known.

9. All public nuisances and unsanitary premises are reported to the town council. This town has no inspector of buildings.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. Isaac F. Brownell, of Tiverton, and Seabury & Peckham, of Tiverton Four Corners, are the ice dealers of this town.

## PROVIDENCE COUNTY.

1. BURRILLVILLE.

2. Edward Collins. health officer.

3. Diphtheria was prevalent during the last three months of the year, there being twenty-three cases of this disease with five deaths.

4. Isolation was maintained.

5. All of the sick were isolated.

6. Inspections of premises where sickness prevailed were made, and sanitary conditions found good or apparently so.

7. Several sanitary inspections of cess-pools and sink-drains were made during the year.

8. No unhealthy localities in this town are known.

9. All public nuisances and unsanitary premises are reported to the town council. This town has no inspector of buildings.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. C. A. Moore, of Pascoag, and F. W. Wood, of Harrisville, are the ice dealers of this town.

1. CENTRAL FALLS.

2. Charles F. Sweet, M. D., health officer.

3. During the year there were twenty-one cases of small-pox, one of which was fatal, in this city; also sixty-one cases of scarlet fever, thirteen of which were fatal.

4. Isolation was maintained; the small-pox cases in the hospital and the other cases at home.

5. All of the sick were isolated.

6. Inspections of premises where sickness prevailed were made, and with a few exceptions sanitary conditions were found good.

7. Any unsanitary conditions reported to the health officer are investigated.

8. No unhealthy localities in this city are known.

9. All nuisances are ordered abated and rarely are cases obliged to be reported to the board of health. The inspector of buildings attends to all unsafe structures.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this city.

11. The Pawtucket and the Central Falls Ice Companies, and Charles H. Perry & Company, are the ice dealers of this city.

1. CRANSTON.

2. Daniel S. Latham, M. D., health officer.

3. There were no epidemics in this town during the year, although there were many scattered cases of measles, diphtheria, scarlet fever, and typhoid.

4. Isolation was attempted and in most cases maintained.

5. Fully ninety-five per cent. of the sick was isolated.

6. Several sanitary inspections were made where sickness prevailed. In most cases sanitary conditions were good.

7. Sanitary inspections were made both at the option of the health officer and upon complaint.

8. No unhealthy localities in this town are known.

9. Such nuisances as are not abated after notice are reported to the town council. The health officer has nothing to do with buildings unsafe in case of fire.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. The Providence (Old Crystal) Ice Company is the ice dealer of this town.

1. CUMBERLAND.

2. James A. Cullen, M. D., health officer.

3. Small-pox was prevalent during the months of July, August, and September, there being twenty-three cases of this disease, one of which was fatal.

4. Isolation was maintained.

5. All of the sick were isolated.

6. All suspicious places were inspected.

7. Sanitary inspections were made during the year.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. John Connolly and Frank Meader, of Ashton, James Meharg, of Lonsdale, and the Pawtucket Ice Company are the ice dealers of this town.

1. EAST PROVIDENCE. No report from the health officer.

1. FOSTER.

2. Henry Arnold, M. D., health officer.

3. There were no epidemics in this town during the year.

7. No sanitary inspections were made during the year.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. There are no ice dealers in this town.

## 1. GLOCESTER.

2. George A. Harris, M. D., health officer.

3. There were no epidemics in this town during the year.

7. Two sanitary inspections were made both by request of owner or tenant. These were not made on account of sickness, but rather with a view of prevention.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

11. Wilson &amp; Place are the ice dealers of this town.

## 1. JOHNSTON.

2. Ralph H. R. Shaw, M. D., health officer.

3. There were no epidemics in this town during the year.

4. Isolation was maintained.

5. All cases reported were isolated.

6. Inspection was made at Manton, diphtheria prevailing there, mostly among Italians in new cheaply built houses in swampy localities.

7. At the option of the health officer, when any infectious sickness was reported, cess-pools, privies, and cellars were examined and accumulations of filth removed.

8. No unhealthy localities in this town are known.

9. Public nuisances, unsanitary premises, etc., are not reported to the town council, as the board of health possesses the powers formerly vested in said council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. W. E. Merrill, of Thornton, the Hughesdale Ice Company, of Hughesdale, and the Pocasset Ice Company, of Plainfield Street, are the ice dealers of this town.

1. LINCOLN. No report from the health officer.

## 1. NORTH PROVIDENCE.

2. Michael J. Kirby, health officer.

3. There were no epidemics in this town during the year. The contagious diseases reported were fifteen cases of measles with one death, six cases of diphtheria,



with one death, two cases of scarlet fever and one of small-pox, no deaths resulting from the last two mentioned.

4. Isolation was strictly maintained.
5. All of the sick were isolated.
6. Inspections of premises where sickness prevailed were not made.
7. Several pools, vaults, and hog-pens were called to the attention of the health officer and placed in a healthy condition.
8. No unhealthy localities in this town are known.
9. All public nuisances, unsanitary premises, etc., are reported to the town council.
10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.
11. Walter Keene, of Centredale, Fred Walsh, of Manton. A. C. Gould, of Georgiaville, and W. S. Seamons and W. A. Greene, of Providence, are the ice dealers of this town.

1. NORTH SMITHFIELD.
2. Edgar F. Hamlin, M. D., health officer.
3. There were no epidemics in this town during the year. The contagious diseases reported were six cases of diphtheria, and eight of scarlet fever. No deaths resulted from either of these diseases.
4. Isolation was maintained.
5. All of the sick were isolated.
6. Inspections of premises where sickness prevailed were made in all cases, and sanitary conditions and arrangements were found to be generally good.
7. Several sanitary inspections of various premises in different localities were made at the option of the health officer.
8. No unhealthy localities in this town are known.
9. All public nuisances, unsanitary premises, etc., are reported to the town council, except in special cases.
10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.
11. Albert Schnoir, of Slatersville, and C. R. Day & Company, of Millville, Mass., are the ice dealers of this town.

1. PAWTUCKET.
2. Byron U. Richards, M. D., health officer.



3. There was no large prevalence of any contagious disease in this city during the year.

4. Isolation was maintained in contagious disease.

5. All cases were isolated.

6. Inspections of premises where sickness prevailed were made, and in about fifty per cent. of such cases conditions were ordered improved.

7. Upon complaint, investigation was made of one hundred and two various nuisances, all of which were abated.

8. Many tenement houses in this city are unsanitary, and changes should be made.

9. All public nuisances, unsanitary premises, etc., are reported to the board of aldermen, but there is seldom anything done about any such complaint.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this city.

11. The Citizens', Pawtucket, and Union Ice Companies of this city, and the South Attleboro Ice Company, of South Attleboro, Mass., are the ice dealers of this city.

#### 1. PROVIDENCE.

2. Charles V. Chapin, M. D., is superintendent of health; Eugene P. King, M. D., is medical inspector, and Charles H. Leonard, M. D., is vaccinating physician.

3. The following extracts from Dr. Chapin's report will fully answer all questions in circular No. 132:

#### GARBAGE.

During the year the "swill and house offal" was collected by Messrs. A. H. & J. Barney under a temporary arrangement at the rate of 15 1-2 cents per capita. The amount paid has been \$2,299.17 per month, the population being estimated at the time the agreement was made at 178,000. This makes the annual payments \$27,590.04. The contractors use 22 two-horse wagons, and it is estimated that about 16,000 tons of garbage are collected annually.

A short history of garbage collection and disposal was given in my last report.

#### DISINFECTION.

Disinfection after communicable disease in the city is not compulsory, and is only done at the request of the family. It is done by this department without charge.

Official disinfection in Providence was begun in 1885 and was purely voluntary. It was performed by the medical inspector by burning sulphur. There were only 39 such fumigations in that year. As it was shown during the next few years that sulphurous acid gas has no penetrating power and is not very efficient at the best, it was determined to supplement its use by steam disinfection. This was begun in 1889 in a small wooden building to which the goods were taken in canvas bags. In 1890 an iron tank was substituted for this building. As the use of sulphur was shown to be quite unreliable even for surface disinfection and yet caused considerable injury to property, its use was discontinued in 1896. As it seemed to me that besides the dishes used by the patient, the personal clothing and bed clothing, the furniture and the woodwork of the room were the most likely to be infected, it was determined to leave at each infected house small boxes of corrosive sublimate with directions for making a solution for soaking clothes and washing woodwork and furniture. This has been done since 1896. In 1897 it appeared that formaldehyde would serve as an efficient gaseous disinfectant and its use was begun. Several methods of generating it have been tried and the method mentioned below has been in use for several years. In steam disinfection mattresses and blankets and occasionally carpets were about all that was usually sent to the steam shed. Blankets in the families where communicable diseases generally occur are often washed, and mattresses are not in my opinion liable to be much infected, and as these goods could all be freely sprayed with formalin, and as steam disinfection is comparatively expensive, its use began to diminish in 1899, and it is now rarely resorted to. For the past twelve or thirteen years disinfection after some of the modes above described has been done after nearly every case of scarlet fever and diphtheria. At present a modified Chicago method of using formaldehyde is followed. In some instances sheets are hung up and sprayed exactly as in Chicago, but in a large proportion of cases the spray is applied to the carpets, rugs, hangings, clothing, bedding, etc., which happen to be in the room and which are spread out as freely as possible. Corrosive sublimate is left at nearly every house and is often furnished during the course of the disease.

It is of interest to know how often these diseases recur after the process of disinfection, so-called. It would be more interesting to compare the degree of recurrence in those families where disinfection is done with those families in which it is neglected, but previous to the last ten years the facts as to disinfection were not always noted on the record slip and even of late years this has sometimes been omitted. For the last ten years, however, it can be seen from the table of disinfections done that the city disinfects in about 90 per cent. of all cases.

Since 1895 there have been in diphtheria at least 1,400 families in which susceptible children remained after the removal of the warning sign. Of these

families 55 were afterwards attacked and the date on which they were attacked was as follows:

TABLE V.

## DIPHTHERIA.

Day after the removal of the placard on which the disease recurred.

Day.	Number of Instances.	Day.	Number of Instances.
1 .....	2	21 .....	
2 .....	2	22 .....	
3 .....	5	23 .....	
4 .....	4	24 .....	
5 .....		25 .....	
6 .....	3	26 .....	1
7 .....	6	27 .....	
8 .....	1	28 .....	1
9 .....	3	29 .....	
10 .....	3	30 .....	
11 .....	2	31 .....	1
12 .....		2 mo. ....	9
13 .....		3 " .....	2
14 .....	2	4 " .....	2
15 .....		5 " .....	1
16 .....		6 " .....	
17 .....	1	7 " .....	1
18 .....	3		
19 .....		Total.....	55
20 .....			

Of the above there were 3 instances where the disease recurred in those families where there was no official disinfection. This is less often than in those families where there was disinfection. These 55 instances of recurrence must be at the rate of about 1 in every 27 families or thereabouts. There were also twelve instances in which the disease recurred in the same house, but in another family. This is about 1 in every 124. The date of the development of these twelve cases after the removal of the placard was 1 on the second day, 1 on the third, 2 on the seventh, 1 on the sixteenth, 1 on the twenty-fifth, 2 in the second month (in one of which there was no official disinfection), 1 in the fourth, 1 in the fifth, 1 in the seventh, and 1 in the eleventh month. There were also the five cases in persons who had removed from home and were attacked on their return and which might also be attributed to failure of disinfection.

If the cases recurring after disinfection be studied in detail, as they cannot be in this report, it is seen that some of them, though perhaps not many, are probably not recurrences at all, but were infected from outside, there being other cases and often many of them, in the neighborhood. It must also be remembered that in the majority of cases no cultures were taken from the members of the family who had remained well, and that when they were taken they were usually from the throat only, and that many times cultures were not taken from even the patient, and when they were taken they were generally only throat cultures. Investigations made in this and other cities show that the nose is as likely to be infected as the throat and that a single culture fails to show the bacilli in about 10 per cent. of the throats examined and also that the well members of the family are likely to be infected in throat or nose to the extent of from 20 to 50 per cent. It is also known that virulent bacilli will remain in throat and nose sometimes for weeks or months. It appears certain then that in the 1,400 families here considered there must have been hundreds of cases of infection remaining after the warning sign was removed, and the wonder is not that the disease recurred so often but that it did not recur oftener. Of course in such cases it can make no difference whether there is any disinfection or not so long as the persons in the house are harboring the living and growing germs.

Since 1895 there must have been in scarlet fever at least 1,300 families in which susceptible children remained after the removal of the warning sign. The number of families in which the disease recurred, and the day after the removal of the warning sign on which the disease developed, are shown in the following:

TABLE VI.

## SCARLET FEVER.

Day after removal of placard on which disease recurred.

Day.	Number of Instances.	Day.	Number of Instances.
1 .....	1	21 .....	
2 .....	2	22 .....	
3 .....	1	23 .....	
4 .....	2	24 .....	
5 .....	1	25 .....	
6 .....		26 .....	
7 .....		27 .....	1
8 .....	1	28 .....	
9 .....	1	29 .....	
10 .....	1	30 .....	
11 .....	2	31 .....	
12 .....	1	2 mo. ....	4
13 .....	1	3 " .....	5
14 .....		4 " .....	
15 .....		5 " .....	
16 .....	1	6 " .....	
17 .....	2	7 " .....	1
18 .....			
19 .....	1	Total.....	30
20 .....	1		

Of the above there were two instances, one each in the second and third month in which there was no official disinfection. In two instances, on the third and twentieth day it was afterwards discovered that there was a case in the house still desquamating. The 30 instances in which the disease recurred would be at the rate of about one in every 43 families. This is not as often as diphtheria recurs though the figures are not large enough to be conclusive. It is probable, however, that in Providence diphtheria does tend to recur more frequently than scarlet fever. If so it is doubtless due to the shorter time that isolation is maintained in the former disease. In scarlet fever the period of isolation has never been less than four weeks and during the greater part of the last ten years it has been five weeks and in all cases until desquamation has ceased. In diphtheria, as shown in Table X the period of isolation has been very much less, even when a negative culture was required from every member of the household. If two successive negative cultures were required from the throat and nose of every

member of the family in diphtheria, it is probable that the recurrence of this disease would be less than that of scarlet fever. But such a requirement is impracticable for various reasons. One of these is that the public, not seeing the bacilli have little faith in them, while desquamation is something they can see and it appeals to their "common sense" that isolation should be maintained while it continues. In this view the medical profession largely agrees with the public. It is worthy of note in this connection that after return from the hospital, where double throat and nose negatives are required, there are fewer return cases of diphtheria than of scarlet fever.

There have been in scarlet fever since 1895 seven instances in which the disease recurred in other families in the house after the warning sign had been removed. This is almost one out of 190 families, somewhat less than in diphtheria and doubtless for the reason given above. The dates of the sickness in these second families were 2 on the first day after the removal of the placard, 2 on the seventh day, 1 on the fourteenth and 2 during the second month, in one of which no official disinfection was done.

In three out of the 37 instances in which there was a recurrence of the disease in the same or other families in the house there was no official disinfection. It is thus probable that the chance of recurrence where disinfection is done is not greater than where it is not done.

If to the above 37 cases are added the eight (1896 to 1903) which were removed from home and were taken sick on their return we have 45 instances in which it is possible that there was a recurrence of the disease owing to failure of disinfection. This is not a large number when it is remembered that during the period under consideration there were recorded 3,853 cases of the disease.

#### VACCINATION.

During the year 1903 the number of persons vaccinated was 2,529. The only public vaccination has been at the Fourth Ward Room on Fountain street, Friday afternoons. The use of humanized virus which had hitherto been chiefly employed, was discontinued early in 1901 and glycerinized virus furnished by the Health Department of the City of New York has since been used. The number of certificates of vaccination issued was 2,891. The following table gives the number of persons vaccinated and the number of certificates issued from 1856 to 1880, from 1881 to 1890, and during each year since that time:

During the year it has been the custom to wash the arm of the child with alcohol and allow it to dry without wiping, before vaccinating. In most cases the arm is previously washed with soap and water before using the alcohol. A fresh piece of sterilized cotton is used for each washing. When there are many



children to be vaccinated one or more trained nurses have been employed to prepare the arms. After the vaccination a Mulford paper shield is applied and printed directions are given to remove in the next day.

#### CONTAGIOUS DISEASE HOSPITAL.

In 1891 the Rhode Island Hospital began to receive scarlet fever and diphtheria patients in the "Russell Ward," and an ambulance for their transport was purchased the same year. The Russell Ward soon proved inadequate and the contagious or "city ward" of the Rhode Island Hospital, a description of which may be found in my report for 1896, page 37, was built by the city on the grounds of the Rhode Island Hospital, and was opened January 13, 1896. The ward is maintained by the Rhode Island Hospital, and the city pays \$15 per week for every patient sent to the hospital by this department. During the year there were removed to the hospital under my direction 234 cases, and the total expense to the city for caring for them was \$11,352.56. The following shows the number of cases admitted since the hospital was opened and also the number of deaths that occurred in the hospital and the amount paid for the care of the patients:

TABLE IX.

#### COMMUNICABLE DISEASE HOSPITAL.

YEAR.	SCARLET FEVER.		DIPHThERIA.		MEASLES.		Total Cases.	Expense.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		
1891.....	6	0	4	1	.....	.....	10	\$486 43
1892.....	13	2	4	1	.....	.....	17	1,553 36
1893.....	20	1	5	1	.....	.....	25	1,267 77
1894.....	27	2	4	2	.....	.....	31	2,297 07
1895.....	37	0	27	3	.....	.....	64	3,614 78
1896.....	35	2	103	10	.....	.....	138	4,679 64
1897.....	22	2	57	6	.....	.....	79	4,924 35
1898.....	21	2	70	6	.....	.....	91	3,404 74
1899.....	40	2	47	3	6	0	93	4,390 06
1900.....	49	1	87	10	21	0	157	6,943 61
1901.....	37	2	115	20	1	0	153	5,039 58
1902.....	24	4	80	11	1	0	105	4,442 18
1903.....	64	9	147	18	23	0	234	11,352 56
Totals.....	395	29	750	92	52	0	1,197	\$54,396 13



Besides the above, in 1902, sixteen cases of diphtheria and four of scarlet fever, and in 1903, twenty-six of diphtheria and five of scarlet fever developed in the hospital. In 1902 five cases of diphtheria and 1903 two of diphtheria and one of scarlet fever were brought to the hospital from outside the city.

When the hospital was first opened, it was not very popular. There was considerable difficulty in persuading people to go to it or to send their children. But the prejudice against hospitals in general and the contagious ward in particular has largely disappeared and the public is now anxious to enjoy the great advantages afforded by removal to the hospital of cases of communicable disease. For three or four years owing to lack of accommodations and lack of funds, no effort has been made to induce patients to go to the hospital. but the requests for removal there have increased very rapidly and the popularity of the hospital is likely to increase still more rapidly in the near future. For some time the present ward has been badly crowded and additional room is sorely needed. Unfortunately the building erected by the city in 1896 has accommodation for only two diseases. Frequently there is urgent need of sending other communicable diseases to the hospital, and not infrequently a combination of two diseases in the same person is found, and often it is impossible to decide upon the correct diagnosis in the early stages of the disease. To meet these emergencies a number of rooms completely isolated from one another are a necessity. It is imperative that something should be done at once to provide additional hospital facilities for communicable diseases. There are comparatively few well-to-do persons who would care to make use of the contagious disease hospital. Indeed, the charge of \$21 per week which is made for private patients is prohibited except for a very small number. The majority of patients are poor or in very moderate circumstances and unable to pay at all. If required to pay anything they could not or would not go. But in many instances it is very desirable for the community that they should go. They must be treated much more liberally than persons sick with non-contagious diseases. It makes no difference to the public whether the latter go to the hospital or not, but it does make a difference in contagious diseases. The city must expect to spend money for the care of contagious disease, when it would not if the same persons were sick with something else. This problem is very different from that of the care of the ordinary sick poor.

There are several advantages in the removal of the patient to the hospital in communicable diseases. It is often of very great benefit to the patients. Persons in lodging houses, on board ship, in cheap boarding houses or in the families of the very poor, cannot receive proper nursing, and often lack the necessities of life. In diphtheria antitoxin sometimes cannot be obtained for the poor and intubation, which is often needed, cannot be done unless a competent nurse is

present to look after the patient. The cases that are sent to the hospital, are, on the average, much more severe than those cared for at home, particularly in diphtheria, but the death rate in the hospital remains about the same in diphtheria as among the much milder cases treated outside. In scarlet fever the death rate in the hospital is higher than outside because no such specifics as anti-toxin and intubation are available and the class of cases received is severe.

It is of advantage to the family in many cases to have the patient sent to the hospital because it permits wage earners to continue at their work. Often if the patient remains at home the sole support of the family is lost and application must be made to the poor department for assistance.

Removal to the hospital is of advantage to the family in removing the source of infection and thus preventing the extension of the disease to other members.

#### INFECTIOUS DISEASES, HISTORY OF THEIR PREVENTION

Previous to July 1, 1856, there was no organized health department in Providence. At various times there had been outbreaks of small-pox, cholera, and yellow fever, and special committees had been appointed to deal with them. Between these outbreaks very little was done in the prevention of disease. Owning to an outbreak of cholera in 1854, public attention was called to the advisability of establishing a permanent health department. The office of superintendent of health was created and Dr. Edwin M. Snow, who had devoted great attention to the study of cholera during its prevalence, was its first incumbent and remained in office until 1884.

Such being the origin of our health department it was but natural that its work should at first be chiefly devoted to the prevention of nuisances and the removal of filth, since cholera was known to be dependent to a large degree on failure of drainage, and the consequent pollution of sources of water supply. Typhoid fever was also believed to be largely dependent on similar conditions. The municipal cleansing which followed was doubtless of value, for cholera has since then only appeared in the city once and at that time caused only fourteen deaths. Dr. Snow earnestly advocated the introduction of a pure water supply and the construction of a system of sewerage as well as many other sanitary improvements, but it was many years before any of these recommendations were carried out.

Three important steps have been taken to check the prevalence of typhoid fever in this city. The first of these was the introduction of a public water supply. Although this was not without reproach and has been the cause of sickness, it has been on the whole much better than dependence upon wells. The second step was the construction of sewers and the abolition of privy vaults and

cesspools. The third undertaking was the construction of a filtering plant, which will soon be completed and will if properly managed, remove all danger of typhoid infection through our water supply.

During Dr. Snow's administration a smallpox hospital was built, which, though not handsome, is still a useful and comfortable building. The most approved methods of isolation, disinfection and vaccination were employed to combat this disease and the result was a marked decrease in its prevalence as compared with former years. In the most severe outbreak of the disease which occurred during the century Providence suffered less than many other American cities.

Although medical inspection for the common contagious diseases was urged, and hospital accommodation was asked for, nothing was done along these lines till the latter part of 1883 when an inspector was appointed to look after communicable diseases. Until that time no isolation was attempted and no restriction placed upon school attendance from families where there was scarlet fever or diphtheria. Intercourse with infected families was free except as restricted by the advice of the attending physician or the views of the public, and when physicians only partially recognized the contagiousness of scarlet fever and diphtheria there was very often no restriction whatever. Since 1884 the work of this department has been largely devoted to the restriction of these two diseases. The sanitary inspector appointed in 1883, at first merely looked after nuisances in infected houses, but in 1884 he excluded from school all children in the infected house.

On April 1, 1885, a most important step was taken in the appointment of a medical inspector for communicable diseases. Dr. Gardner T. Swarts filled this position with great energy and ability for nine years and at a ridiculously small salary. At first he also fumigated with sulphur all infected houses when this was desired. He also distributed printed directions for the management of these diseases. During this year explicit rules were adopted in regard to isolation, and infected houses were placarded when the occupants were willing, which was usually the case. In 1887 placarding was made compulsory and public funerals were forbidden. In 1889 steam disinfection was begun and a small ward at the Rhode Island Hospital was made available for these diseases. In 1891 the question of the availability of the cultural method of diagnosis in diphtheria was investigated by Dr. Swarts, who had, in 1889, established a bacteriological laboratory in the city hall at his own expense, but the method was not at that time considered by us to be sufficiently perfected. The use of cultures was, however, introduced in 1895, being offered to the whole State by Dr. Swarts, who was then Secretary of the State Board of Health. In 1896 the present scarlet fever and diphtheria hospital was built, wage earners in infected families were generally kept at home and the strictness of isolation increased. In 1897

negative cultures were required in diphtheria from both sick and well before the placard was removed. In that year formaldehyde disinfection was introduced. In general it may be said that compulsory isolation, and disinfection at public expense have been the main features of the fight against these two diseases, and that from 1884 to 1900 the strictness of isolation and the thoroughness of disinfection progressively increased. It is well to see whether a decrease in these diseases has followed the adoption of these measures. If the tables and diagrams given on the following pages be examined it will appear that there has been a very appreciable diminution in the death rate from scarlet fever and diphtheria. That some of this improvement, particularly in scarlet fever, is due to a milder type of the disease is not unlikely, and in diphtheria it is certain that during the past five or six years the death rate has been somewhat reduced by the use of antitoxin, though this remedy has not been as freely used in Providence as in many other cities. But making some allowance for these two factors it must be admitted that there has been during the past twenty years a decreased prevalence of these diseases. That this has been due to the methods of management urged and enforced is extremely probable. It is instructive in this connection to compare the mortality from scarlet fever and diphtheria with that from measles and whooping cough. In the former diseases much has been done to secure isolation and disinfection, but the latter diseases have, for various reasons, been allowed to run pretty much their own course. By examining the diagrams it will be seen that the mortality from measles and whooping cough has not changed much in the last 48 years, while in scarlet fever and diphtheria it has during the past twenty years during which restrictive measures have been enforced been much less than in the preceding period. Moreover, similar measures in other cities and towns have produced similar results.

No claim is made that these methods have accomplished all that ought to be accomplished, or that they are the best methods that can be devised. On the contrary, there is every reason to expect a progressive improvement in the mode of controlling contagious diseases. As long as our knowledge of these diseases continues to grow so long will there be a progressive improvement in our methods of fighting them. So far as these methods are based upon well substantiated facts they may be relied upon as reasonable and useful, and when they depend upon theory or guesswork there is always room for criticism and improvement. Progress is to be expected in sanitation as it is in transportation and manufactures.

#### TUBERCULOSIS.

On Jan. 15, 1903, the board of aldermen ordered that tuberculosis should be added to the list of notifiable diseases. The attention of physicians was called to the new rule by a circular.



A considerable number of cases were immediately reported by their attending physicians, but the reports soon began to fall off, and, by the end of the year, practically none were being received. In all 177 cases were reported, all but two or three of which were the pulmonary form. In the majority of these the attending physician expressed a wish that the patient should not be visited by an inspector from this department. The physicians, however, are quite ready to make use of the circular of directions. Sputum cups were distributed to quite a number, but by no means the majority.

#### TYPHOID FEVER.

Typhoid fever except in a comparatively small number of cases is not due to direct contagion but to the passage of the bacilli in water or milk, on vegetables and other articles of food, or in perhaps other indirect ways. Of course direct infection must be guarded against and printed advice in regard to this is given by this department in all cases of this disease. But the chief measures for restricting typhoid fever require the work of other municipal departments. The furnishing of a pure water supply and the prompt removal of human excreta are the most important measures now known for restricting typhoid fever. Until 1871 wells furnished the only water supply for Providence, but in that year Pawtuxet water was introduced, and very rapidly came into general use and the wells were abandoned. Although the Pawtuxet river is liable to dangerous pollution and was more so when it was first made use of for a public water supply, yet it is improbable that it has been specifically contaminated except on three or four occasions, and that on the whole it has furnished an excellent supply. The fall in the death rate from typhoid fever which took place at about this time, may be fairly attributed to the introduction of city water. Though the construction of public sewers began soon after the introduction of water, the old style privy vaults were retained until 1892, when their removal was ordered. This was quite rapidly accomplished during the next few years and the accompanying decrease in typhoid was not improbably due to the removal of these receptacles of human excreta.

#### DIPHTHERIA.

Besides the cases which were recorded as diphtheria, there were eleven cases of membranous croup and six of other forms of laryngitis, all resulting in death, which came to the knowledge of this department in 1903. It is probable that most of these cases were really diphtheria, and if reckoned would considerably increase the mortality from that disease. All of the cases of membranous croup were placarded with a membranous croup sign and were treated as if contagious. In none of these cases were any cultures taken.

There were reckoned as diphtheria 288 cases in 197 families in none of which diphtheria bacilli were found. Some of these were doubtless not diphtheria, but the attending physician reported them as diphtheria, and in 255 of the cases no culture was taken for diagnosis. In the other thirty-three cases cultures were taken which proved to be negative. In seventeen of these cases only one culture was taken. In thirteen instances two negative cultures were obtained, and in three instances, three. Of the 255 cases where no positive cultural results were obtained, thirty-six resulted fatally, and doubtless in many the serious condition of the patient and the positive character of the clinical symptoms were reasons for the failure of the physician to take a culture.

There were 31 other cases in which the physician did not consider it necessary to take a culture for diagnosis, but in these cases or in their families diphtheria bacilli were afterwards found. There were thus in all 286 cases of diphtheria in which the attending physician did not avail himself of the aid of bacteriology in making his diagnosis. This was forty per cent. of all cases. The year before, it was thirty-three per cent.

There were in the families where diphtheria bacilli were found a number of persons who were sick with the symptoms of the disease, but yet in whom no diphtheria bacilli were found or were not found on the first examination. In two instances there were two successive negatives although there were other cases known to be diphtheria in the family, and under the same circumstances there were twenty-two instances where one negative only was obtained. No subsequent cultures were taken from the above cases, but they were all doubtless true diphtheria. There were also eighteen instances in which a negative was followed by a positive, five instances in which two negatives were followed by a positive, two instances where three negatives were so followed, and two instances where four negatives were followed by a positive. All of the cultures referred to in this paragraph were for diagnosis and taken early in the disease.

In 1903 there were examined by the State, city and hospital laboratories 3,638 cultures. Sixty-two cultures were taken from scarlet fever cases of which fifty-nine were negative.

From 1875 to 1879 there was a severe outbreak culminating in 1877. At this time the disease was generally attributed to "sewer gas" and "filth." There was a good deal in 1881, and it also prevailed, though not so extensively, from 1886 to 1890. Since then, with the exception of 1896, the mortality from this disease has been very much less.

Various rules have been adopted and various measures carried out in combating this disease. The most effective of these seem to be the teaching of the contagious nature of diphtheria, the placarding of houses where there are cases, and the exclusion from school of children from infected families. The stringency

of isolation required by this department was gradually increased up to 1902, when it was very considerably relaxed. The chief trouble in the management of diphtheria is the determination of how long the warning sign shall be kept up. While in the majority of cases the diphtheria bacilli disappear in a short time, they sometimes linger in the throat and nose for many months. Theoretically, isolation should be maintained until all diphtheria germs have disappeared from the family. This was attempted, but is not practicable because it does not meet with either lay or medical approval. It probably cannot be effectual in a city like Providence because so many cases of slight infection escape the knowledge of the health department. A rule which does not inflict much hardship and meets with general approval will do the most good.

Previous to 1895 it was the rule in cases of diphtheria to keep up the warning sign until one week after the recovery of the patient, as certified to by the attending physician. During that year the use of cultures was begun, and a negative culture was required from the throat of the patient before isolation was ended. In 1896 another step was taken and a negative culture was required from every member of the family. This rule was in force until March, 1902, when it was changed for reasons stated in my last report, the chief of which was the opposition created by the former rule.

In true diphtheria the most susceptible period is the fifth year, though from the second to the sixth the degree of danger is not much less. From the sixth year onward there is a gradual decrease in susceptibility, until in adult life the danger of contracting it in the family is a little less than eight per cent. The susceptibility of infants under one year of age is about eighteen per cent. Even the youngest children may be affected, as a case is recorded here of an infant aged three weeks. In this connection the term insusceptibility is used in its broadest sense. It does not necessarily mean that there is any real immunity, such as might be conferred by a previous attack. Such immunity in diphtheria is of short duration and probably is of little importance in protecting members of the family from attack. It is not at all unlikely that the excessive number of children attacked between the ages of two and six is due largely to the greater facility with which the secretions of nose and mouth pass from one to another because of the intimate contact connected with the play of children.

#### SCARLET FEVER.

During the last seventeen years, from 652 families infected with scarlet fever there have been removed 1,051 persons, mostly children, none of whom had had the disease. If these had remained at home it is probable that 143 of them would have had the disease or 1 in 7. Actually 52 were attacked while away from home or 1 in 22. There were also 19 who were attacked on their return,



making in all 71 or 1 in 18. The protection afforded by removal of the well persons from the infected house is much greater than is obtained by removing the patient to the hospital, just as it is in diphtheria, and doubtless for the same reasons. There appears to be a greater liability in scarlet fever than there is in diphtheria to contract the disease when the children come home. The data are not extensive enough to render this certain, but I am inclined to think it is so, for we find also that scarlet fever patients returning from the hospital are more likely to infect others than are diphtheria patients. This is probably because our present method of determining when a diphtheria patient is free from infection is surer than our method of determining when a scarlet fever patient is free from infection. It may also indicate that the scarlet fever infection continues longer and is more difficult to destroy.

Of the nineteen cases which were taken sick on their return after removal from home, one was attacked on the 3d day after return, two on the 6th, two on the 7th, one on the 9th, one on the 10th, two on the 11th, two on the 12th, and one each on the 13th, 14th, 17th, 24th, 25th, 26th, 28th, and 36th day. It is not improbable, of course, that some of the later may have contracted the disease elsewhere than in their homes.

#### GENERAL CONCLUSIONS.

##### *Recent Development of Sanitary Science:*

The last fifteen years of the 19th century were marked by the greatest progress that sanitary science has ever made. Although a few important facts had previously been discovered such as the protective power of vaccination and the importance of fecal matter in the transmission of cholera and typhoid fever, it may almost be said that the science of sanitation had no existence until Koch, in 1878, discovered those methods of bacteriological research which were to do so much to solve the problems of the cause of the infectious diseases. But it was some years before these methods bore fruit, and even now the notions in regard to sanitation, which prevailed previous to Koch's time, are quite generally accepted, sometimes even by medical men and health officers. Up to within the last quarter of a century it was generally believed that one of the chief factors in the causation of the infectious diseases was decaying animal and vegetable matter and the gases or other emanations from the same. Where such could not be considered the cause of the infection, the latter was attributed to epidemic influences, by which was meant peculiar, but entirely unknown atmospheric influences. Such being the current views in regard to the cause of disease, the removal of filth was considered the most important sanitary measure and the health officer was first of all a nuisance inspector. The contagious nature of

the infectious diseases was only slightly recognized, for even as late as 1870, Dr. Snow found it necessary to combat the popular idea that small-pox, the most clearly contagious of all diseases, was due to "epidemic influences." The chief result of modern research has been the demonstration that the infectious diseases are caused by minute parasites or germs, and that they are transmitted from one persons to another, usually in a pretty direct manner. In other words, these diseases, which it is the chief duty of the health department to combat, are contagious. The old notions as to the filth origin of disease were the prevailing ones when I was first elected superintendent of health in 1884, and were of course, largely accepted by me, although even in my first report I stated that "too much attention and expense is bestowed by most health departments upon nuisances.

Yet there is no doubt that more attention might well be given to the prevention of the more common infectious diseases and more time devoted to their scientific investigation."

While the contagious nature of the diseases under consideration has been established by both experiment and clinical observation very much remains to be learned about the exact mode in which they pass from one person to another. It is plain that our success in fighting these diseases must depend largely upon our knowledge of this mode of transmission. Views, which were current only a few years ago, have been very largely modified. Most of the views formerly held were mainly theoretical and many of our modern ideas are also largely theoretical. Nevertheless, substantial progress has been made in our exact knowledge of the ways in which these diseases are transmitted. Many established facts have taken the place of theory in directing our modes of combating the communicable diseases.

#### *The Transmission of Contagious Diseases by Well Persons:*

One of the most important facts which has been recently discovered concerning the contagious diseases is that persons who are perfectly well, or who are only slightly ill, are very frequently infected with the disease and are capable of giving it to others. This is also a discouraging fact, and it has taught us that it is much more difficult to eradicate, or even to partially control these diseases than was at one time supposed. It was formerly believed that nearly every case of scarlet fever, diphtheria, small-pox, typhoid fever, yellow fever and the like would come to the notice of physicians. It was also believed that if physicians would report to the health department all persons sick with these diseases they could be isolated and the diseases stamped out. If every infected person *could* be isolated doubtless it would not be so very difficult to exterminate these diseases. Unfortunately, there appear to be a very considerable number of extremely mild cases of most of the infectious diseases, so mild that they never see a physi-

cian and are not prevented from continuing their ordinary avocations. The greater skill of physicians of the present day, the greater ease with which the poor can obtain medical services, the increased care exercised by school teachers and by parents, and the efforts of health officers in searching for the cause of disease, have shown that the number of mild, unrecognized cases of infectious disease are extremely common, in fact, sometimes more numerous than the better developed cases which are reported and isolated. The history of small-pox outbreaks shows that they are usually due to mild cases which have seen no physician. The study of typhoid fever, particularly in the army, has shown that there are large numbers of so-called "walking cases," which a few years ago would not have been recognized as having the disease. Researches in tropical countries have demonstrated that mild cases of yellow fever, and sub-acute cases of malaria, are the chief factors in the spread of these diseases. During the present outbreak of scarlet fever in this city, the mild unrecognized cases have been extremely numerous. In diphtheria it has long been recognized that some cases are very mild, but it is only within the last few years that it has been shown that a very large number of what are commonly called simple "sore throat," are in reality true diphtheria.

All of the above facts have been well established by clinical evidence alone, but the laboratory study of these diseases, the bacteriological and blood examinations of suspects and of convalescents and of persons who have never been sick at all, show that the infection of these diseases is more widespread and lasting than was formerly suspected. It has of late been demonstrated that in some of these diseases it is not possible to set a hard and fast time limit beyond which it is certain that the patient will be free from infection. While in most cases of scarlet fever, diphtheria and typhoid fever, the period of infection is over in from two to four weeks, yet there is a small proportion of cases in which the person may remain infectious for many weeks and even for many months. In diphtheria and typhoid fever clinical evidence to this effect is substantiated by the evidence afforded by bacteriology, for the germs of these diseases are frequently found developing for a long time in convalescents.

Not only are mild cases extremely common, and convalescents often infectious for a long period, but it has also been demonstrated that many persons who have never been sick at all yet harbor in themselves growing and virulent disease germs. Thus it has been shown by an extended series of observations that there are always present in our large cities scores and hundred of persons who have never been sick, but in whose throats and noses virulent diphtheria bacilli are growing. It is not unlikely that the number of such cases is greater in diphtheria than in most diseases, but it is also likely that in all the infectious diseases,

the number of well persons dangerously infected with the germs of the disease, though themselves showing no symptoms, is very large.

If unrecognized cases and convalescents, and well persons who are dangerously infected, are so numerous in all large communities, is it not reasonable to suppose that they are by all odds the chief factor in the spread of the communicable diseases? It is in most cases impossible to trace the origin of reported cases of the common infectious diseases, but when they are traced they are almost always found to be due to exposure, not to some recognized case, but to some of the sources above mentioned.

*Transmission of Disease Somewhat Difficult:*

Not much more than half the susceptible children in an infected family will contract the disease. It commonly happens that a case of small-pox, scarlet fever, or diphtheria may remain for days or even weeks in a lodging house, school, or public institution without infecting any one else or at the most infecting only one or two. As has been shown in this report scarlet fever and diphtheria rarely extend from one family to another in the same house, unless there is free communication. Physicians and others who are constantly passing from the sick to the well only very exceptionally carry these diseases. We know more about the mode of extension of diphtheria than of any other disease, and in view of what we know it is not surprising that one may be "exposed" to this disease for quite a while without contracting it. The bacilli of diphtheria do not live long outside of the body. They are contained almost exclusively in the secretions of the nose and mouth. They are not given off in the breath and they are rarely carried by the air. It is only when the fresh secretions from the sick person pass pretty directly to the mouth and nose of others that infection takes place, hence it happens that doctors and nurses who take great precautions in regard to the infection are rarely attacked. Children living down stairs do not take the disease from children living up-stairs, but sixty per cent. of children from two to six years of age contract the disease when exposed in the family. This is not surprising when we remember what an enormous chance there is for the interchange of secretions among young children who are constantly playing together.

*Diseases Are Rarely Air-borne:*

Disease germs are not given off from moist surfaces. They are not found in the expired air during ordinary breathing. In many diseases they are thrown off during coughing and sneezing, and hence to be near a sick person at such a time is dangerous. Of course, everything that the patient comes in contact with may become more or less soiled with the secretions of the nose and mouth, and even with the fecal and urinary excretions. Such material cannot get into the air and float about until it is dry and pulverized. But dryness and light rapidly



destroy the commoner disease germs, and it is very rarely that the germs of diphtheria, for instance, can be found in the air or upon the articles in a room occupied by a diphtheria patient. Theoretically then we should not expect diphtheria or similar diseases to be transmitted by currents of air. As a matter of fact there is no evidence to show that they are carried in any such way. While there is some dispute in regard to the transmission of small-pox from hospitals to neighboring houses by means of the air, the weight of authority seems to be against this, and certainly it has never occurred in Providence. There is no evidence that scarlet fever and diphtheria are ever transmitted from one house to another in any such way. And even in the same house these diseases are never carried from one family to another in this manner. In the family, too, it is possible to keep the patient in one room and prevent the infection of other members of the family, although the doors may be freely opened all the time.

*The Extension of Disease by Fomites:*

It is a generally received doctrine even among health officers and physicians that the contagious diseases are frequently, perhaps usually, carried in fomites. The clothing of the patient, of his family, of the nurse and physician, bedding, carpets, hangings, the fur of the cat and the hair of the dog, are all accused of transmitting scarlet fever from sick to well. The whole room, in fact the whole house, including walls, pictures and ceiling are supposed to be dangerously infected. The importance attached to fomites in this connection has always seemed to me to be based on very weak evidence. Many cases are recorded where it is possible that the disease was transmitted in this way, but this is very different from proving that it was so carried. It is possible that diphtheria may be carried in the clothing of the parent of a sick child, but it is also possible and many times more likely that it may be carried living and growing in the father's throat, implanted there by a kiss before it was recognized that the child had the disease. The greatest blow to the fomites theory has been the recent discoveries in regard to yellow fever. The evidence in favor of the transmission of yellow fever in fomites is many times stronger than for any other disease, yet it is now proved beyond question that yellow fever is never transmitted in this way. All of which goes to show that the evidence that fomites play an important role in the spread of disease, is, as I have always considered, decidedly weak.

The guiding principle of effective sanitation is that it is infected persons not infected things that are to be feared.

*Concerning the Value of Disinfection:*

Disinfection of the sick room or the house and its contents, after recovery from contagious disease is supposed to be complete, has been long considered to be one of the most important means of combating these diseases. There is, how-

ever, reason to believe that it is not nearly as essential as has been supposed. As has been before stated, the germs of the more common diseases do not grow outside of the body, and exposed to the ordinary conditions of light and dryness indoors quickly lose their vitality. It is possible, it is true, that very occasionally under particularly favorable circumstances these germs may long remain alive upon articles to which they become attached. But this certainly very seldom happens, and it is doubtful even if no official disinfection were practiced, if any appreciable number of cases would be caused in this way. When the disease passes from one persons to another by means of infected articles it seems certain that in the great majority of cases the interval of time must be short. Spoons, tumblers, pencils, money, pipes, whistles, handkerchiefs, and a host of such articles become smeared with the secretions of an infected person. If these things come in contact with the mouth or nose of another person, if the interval of time is short, infection is very likely to take place. If the interval is long it is not likely to take place. These diseases spread because of such direct contact with unrecognized cases, with convalescents released from isolation and with infected well persons. They do not spread because a house or its contents remain infected for weeks and months after the warning sign has been removed. If this view of the situation is correct, and the evidence in its favor is far stronger than for the views formerly prevailing, it is evident that after the patient is isolated in the house the most important thing is to take the greatest care of all the secretions and excretions, that they may not while fresh come in contact with others. If this is done during the whole course of the disease others will not become infected. Even if it is neglected, thorough housecleaning at the end of the sickness and washing of everything with which the patient came in contact will remove most of the disease germs, even if they remained alive. The very few which might still persist would speedily die.

At present my ideas in regard to disinfection are:

*First.* That the most effectual disinfection is the strictest cleanliness daily throughout the whole course of the illness.

*Second.* That the methods employed by this department are only effective to a moderate degree, if infection of the house and its contents is as great as is generally believed.

*Third.* That for the city to carry out a system of thorough disinfection would be very troublesome, annoying, and expensive.

*Fourth.* That in diphtheria where after recovery the patient and other members of the family frequently continue to grow the germs in their throats for weeks, and in those cases of tuberculosis where no attempt to care for the sputum has been made during the sickness, any disinfection is a farce.

*Fifth.* That the necessity for disinfection in any case has been greatly exaggerated.

*The Agency of Schools in the Extension of Communicable Disease:*

It is generally believed that the intercourse of children in school is an important factor in the spread of infection. There is no doubt that the contagious diseases are disseminated to a certain extent in this way, school outbreaks do occur, and children from different neighborhoods undoubtedly at times contract the disease from one another in school. It has seemed to me of late that the schools are not such an important factor in the spread of these diseases as I at one time supposed. It is certainly true that during the long summer vacation the contagious diseases of childhood prevail less than at other seasons, and it has been alleged that a diminution of these diseases can be noticed after the shorter vacations and recesses at other seasons of the year. Elaborate investigations made in London would seem to indicate that the summer vacation does really have this supposed effect. In order to study the question in Providence I prepared a diagram showing by means of perpendicular lines the number of cases of scarlet fever and diphtheria reported each week for the past ten years. The vacation periods were also indicated.

From an inspection of this diagram it was readily seen that these two diseases tend to diminish during summer weather. It is true that the season of least prevalence is that of the long summer vacation, but this vacation comes in July and August, or during the period of greatest heat. It is a reasonable hypothesis that the decrease of these two diseases in the summer is dependent in some way upon the temperature, rather than upon the vacation. This hypothesis is strengthened by a more detailed consideration of the facts. Thus it is seen that in every year scarlet fever began to diminish in June before the vacation, and on three occasions in 1894, 1895, and 1899, began to increase before the end of the vacation. Diphtheria does not show as marked a tendency to decline in warm weather as does scarlet fever, but it is nevertheless evident. In the years, 1896, 1897, 1898, 1899, and 1902 it did diminish in June before the vacation. It is also noticeable that in 1895, 1896, and 1903 there was a slight increase of this disease after the closing of the schools; also on four occasions, in 1895, 1896, 1900, and 1903, the fall increase began before the opening of the schools. There appears to be little reason for thinking that the decrease in scarlet fever and diphtheria during July and August is due to the vacation.

It hardly seems likely that the short recesses would have any effect on the prevalence of the contagious diseases. If the vacation really did diminish the disease we should expect fewer cases reported in the week after the vacation than during the week of the vacation. After the twenty-six short vacations, diph-



theria decreased in ten, increased in thirteen and remained the same in three. Scarlet fever diminished in eleven, increased in ten and remained the same in five.

During the last 20 years the number of what may be called school outbreaks of scarlet fever and diphtheria have not been very numerous. I have notes of 11 instances in which it appeared quite certain that local outbreaks of diphtheria were due to infection in school. The largest number of cases occurring in any school during an outbreak was 36. In another instance there were 25, in another 18, in another about the same, and in 2 instances 13 cases each. A number of these outbreaks are referred to in some detail in previous reports. In nearly every instance it seemed almost certain that the outbreak was due to the presence of unrecognized cases in school, and in several instances this was demonstrated to be so. In one case a school was closed for a month and reopened without the recurrence of any other cases. In the other schools the outbreak sometimes disappeared of itself, and was sometimes checked by the finding of the unrecognized case which was the cause of the trouble. One of these school outbreaks was in a private school.

There have probably been six school outbreaks of scarlet fever, one of which, involving 28 cases, was in a parochial school, and was probably due to the presence in the school of a case of scarlet fever which the attending physician deliberately failed to report. In three of the outbreaks it was found that a child was attending school while desquamating from the disease. It is curious to note that in one of these cases two children with this disease were in the same school for over three weeks and yet only 4 other cases developed.

It is the custom in this department not to exclude from school, children in the house, except those of the family in which the disease actually exists. If, however, it is believed that there will be no isolation, and there will possibly be a mingling of all the children in the house, they are all excluded. This, however, is not done in more than a quarter of the cases.

In diphtheria, children in the non-infected families are not generally allowed to go to school until a negative culture has been obtained from the throat. Of ninety-six children who were thus examined in 1903, four showed the presence of diphtheria bacilli. During 1903 permits were given to 46 children living in 37 "infected houses," but not in infected families, to attend school. During the past eight years the figures are 467 children in 179 families. In none of these did the disease develop, which indicates that it is quite safe to permit children in the infected house, but not in the infected family, to attend school, except in those cases where manifestly no care is taken.

In scarlet fever children in the non-infected families are in most instances allowed to attend school. If they have had the disease previously they are

given their permits at once, but if they have not had the disease they are usually kept out of school for a week. During 1903 permits were given to 35 susceptible children in 21 families. During the past eight years the figures are 310 children in 188 families. In none of these has the disease developed.

To summarize some of the important things which have been learned in recent years concerning the more common infectious diseases, it may be said that the germs of these diseases rarely grow outside of the body, that they in most instances die quite quickly when removed from the body, and that therefore infection usually takes place quite directly; that the transference of the fresh secretions and excretions of the body from one person to another is the principal mode by which these diseases extend. Things do not readily become infected and do not as a rule remain infected long. It is infected persons not infected things that are to be feared.

We have also learned, and it is a most discouraging fact, that infected persons are much more numerous than was formerly supposed. It is the convalescent, infected well person, and the unrecognized case, that do the harm. At present there seems to be no possible way of learning of these cases or of securing their isolation. It is most encouraging however to know that by strict attention to personal cleanliness and avoiding the secretion of others, each one has it very largely in his own power to avoid the infectious diseases. The preaching of personal cleanliness has now to a large extent taken the place of the preaching of municipal cleanliness.

Owing to the fact that in all our cities the number of unknown infected persons is so great, it is evident that even absolute isolation of the recognized cases cannot stamp out the disease, and it is the fact that scarlet fever and diphtheria have not been stamped out in any in our large cities. If that is so, and if it is true that moderate measures of isolation will prevent most of the danger of the extension of the disease from the isolated cases, is it not wiser not to insist upon too stringent measures. Undue severity will defeat the object sought by causing the concealment of cases. The principal measures to be adopted in large cities in diphtheria and scarlet fever seem to me the isolation of the patient until such time as most of the danger is over and to restrict school attendance of other members of the family, but not to interfere much with the work of adult members. The most important means of securing isolation is the use of the warning sign upon the house.

What has been said in regard to the advisability of moderate measures refers only to large cities and those diseases such as scarlet fever, diphtheria, measles, whooping cough, etc., that have become well established there. Whenever these diseases appear in a country town or any other isolated community, such as a public institution even in a large city, the most stringent measures of isolation

should be adopted, and it is then possible that the disease may be stamped out before infection becomes general. When a new disease, such as small-pox or plague, appears in even the largest cities these same stringent measures should be adopted and they frequently are adopted with the desired result. When diseases have become as well established as scarlet fever and diphtheria are in most large cities to-day, we can hope, under present conditions, merely to hold them within certain limits, not to banish them entirely.

## VITAL STATISTICS.

YEAR.	Population.	Living Births.	Living Births in each 1,000.	Still Births.	Marriages.	Persons Married in each 1,000.	Deaths.	Deaths in each 1,000.
1894.....	143,000	4,026	28.15	191	1,527	21.35	2,900	20.28
1895.....	145,472	3,998	27.48	199	1,622	22.30	3,090	21.24
1896.....	150,000	4,158	27.72	219	1,599	21.32	2,963	19.75
1897.....	154,000	4,148	26.93	220	1,493	19.39	2,818	18.30
1898.....	162,000	4,267	26.34	208	1,601	19.77	2,931	18.09
1899.....	168,000	4,297	25.57	211	1,672	19.90	3,667	18.85
1900.....	175,597	4,569	26.02	207	1,907	21.72	3,680	20.96
1901.....	178,000	4,694	26.37	216	1,875	21.07	3,444	19.35
1902.....	181,000	4,746	26.22	216	2,043	22.57	3,395	18.76
1903.....	185,000	4,935	26.67	252	2,238	24.19	3,900	21.08

## 1. SCITUATE.

## 2. Alberto E. Wood, health officer.

3. The contagious diseases reported during the year were twelve cases of scarlet fever, none of which were fatal.

## 4. Isolation was maintained.

## 5. All of the sick were isolated.

7. Sanitary inspections were made during the year on account of filth and tuberculosis. The premises were thoroughly cleaned and disinfected with formaldehyde.

## 8. No unhealthy localities in this town are known.

9. Public nuisances and unsanitary premises are not reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. William F. Angell and Adelbert L. Wood are the ice dealers of this town.

1. SMITHFIELD. No report from the health officer.

1. WOONSOCKET.

2. William C. Monroe, M. D., health officer.

3. The contagious diseases reported during the year were seventy-eight of diphtheria (including thirteen croup), with thirty-six deaths (including thirteen croup), twenty-five of scarlet fever with seven deaths, and eight of small-pox with no deaths. There were also reported two cases of typhoid, although there undoubtedly must have been others.

4. Isolation was maintained.

5. All of the sick were isolated.

6. Inspections of premises where sickness prevailed were made, but no unusual conditions were found.

7. Sanitary inspections were made nearly every day of the year.

8. No unhealthy localities in this city are known.

9. All public nuisances, unsanitary premises, etc., are reported to the board of aldermen.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. The New England, Woonsocket, and Crystal Ice Companies, and George W. Miller are the ice dealers of this city.

## WASHINGTON COUNTY.

1. CHARLESTOWN.

2. Milton Duckworth, M. D., health officer.

3. Measles was quite prevalent at Carolina, during June and July principally, there being thirty-eight cases, none of which were fatal. The only other contagious disease reported was one case of typhoid.

8. No unhealthy localities in this town are known.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. John C. Tucker, of Carolina, is the ice dealer of this town.

1. EXETER. Has no health officer.

1. HOPKINTON.

2. Henry H. Crandall, health officer.

3. There were no epidemics in this town during the year.

7. No sanitary inspections were made during the year.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. S. R. Avery & Company and William R. Clarke, of Hope Valley, are the ice dealers of this town.

1. NARRAGANSETT.

2. Solomon H. Hale, health officer.

3. Only one case of contagious disease was reported during the year. This was a case of scarlet fever at Point Judith, during the month of September. The patient was a boy fourteen years of age, who had contracted the disease at Rocky Brook, six miles away. Quarantine was established by the health officer, under the direction of the attending physician, and until the case recovered the only person who entered the house was the patients' mother.

7. Sanitary inspections were made during the year at the option of the health officer.

8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. Griffin & Browning, and the Broad Rock Ice Company are the ice dealers of this town.

1. NORTH KINGSTOWN.

2. Harold Metcalf, M. D., health officer.

3. Measles was very prevalent during the last two months of the year, there being one hundred cases of this disease, two of them resulting fatally.

4. Isolation was not maintained.



5. None of the sick were isolated.
6. Inspections of premises where sickness prevailed were made, and general sanitary conditions found good.
7. Sanitary inspections were made at the option of the health officer, whenever complaint was made.
8. No unhealthy localities in this town are known.
9. All public nuisances, unsanitary premises, etc., are reported to the town council.
10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.
11. George Orpen and James Brayman, of Wickford; John Maglone, of Allenton; and John Rose, of Saundertown, are the ice dealers of this town.

1. RICHMOND.

2. Charles A. Fuller, health officer.
3. Measles was prevalent during the first three months of the year, there being seventy cases of this disease, none of which resulted fatally. There were also two cases of scarlet fever reported.
6. Sanitary inspections of premises where sickness prevailed were made.
7. Sanitary inspections were made during the year.
9. All public nuisances, unsanitary premises, etc., are reported to the town council.
10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.
11. S. R. Avery, William Clark, and Frank Marchant are the ice dealers of this town.

1. SOUTH KINGSTOWN.

2. Herbert W. Fison, health officer.
3. The contagious diseases reported were eight cases of measles, six of scarlet fever with one death, and eleven of typhoid with one death.
4. Isolation was maintained.
5. All of the sick were isolated.
7. No sanitary inspections were made during the year.
8. No unhealthy localities in this town are known.

9. All public nuisances, unsanitary premises, etc., are reported to the town council.

10. There has been, to my knowledge, no contamination of the water, milk, or ice supplies of this town.

11. George F. Priday and George W. Holley, of Peacedale, William G. Maine and W. C. Armstrong, of Wakefield, and Asa W. Sweet, of Kingston are the ice dealers of this town.

1. WESTERLY. No report from the health officer



# WATER SUPPLIES.



## EXAMINATION OF WATER SUPPLIES.

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Since 1894 the Board has made monthly analyses of the water supply of the city of Providence, which is taken from the Pawtuxet river.

The samples have been taken at three different points: At the Pettaconset pumping station; at Washington village, on the south branch, at a point above any known source of contamination; and at the village of Hope, on the north branch of the river, above any possible source of contamination from villages, residences, or manufacturers. A sample is also taken from a tap in the laboratory of the State Board of Health in Providence.

These reports have been of considerable service in determining the quality of the supply at various points, and permitting of comparison as to their value and the possibility of pollution at any point between the sources of supply and the intake.

At a time when the question as to the necessity of filtering the supply before serving it to the city arose, a proposal that it might be more desirable to take the supply direct from the reservoirs to be constructed on one of the branches of the river above possible sources of pollution was presented. By reference to the published results of these examinations, it is determined that a vast amount of contamination entered the water between the two upper branches and the intake or pumping station. This arises largely from the surface drainage from fields and villages along the stream, and from the large amount of sediment which has accumulated in the bed of the river.

While the stream is running evenly the sediment is caught in the various reservoirs at the dams connected with the several industries along the banks of the stream. As soon as a mill starts up a rush

of water follows, stirring up and carrying along the sediment which was lying in the shallow stream. This mixture is received at the pumping station, giving a polluted water.

Owing to the distance of the heads of the river, however, and to the probable excessive cost of acquiring control of the water-shed, the proposition of obtaining a supply from the upper branches has been left in abeyance.

An examination of this water supply has been obtained by the engineer's department of the city of Providence for many years, one sample being taken on the first and fifteenth of every month. All of the above examinations since 1894 will be found in detail by months in the previous reports of the Board. The averages of the several years since 1900 will be found in this report in conjunction with the monthly reports.

Filtration for the supply of the city of Providence bids fair to be a reality now before long.

While the supply of the city of Providence is the largest and most important of any in the State, inasmuch as it supplies the largest population, it was believed by the Board that it was equally important that all potable public water supplies in the State should be examined periodically, first to determine their fitness for a drinking-water, and, second, to be posted as to any change which might take place in the character of the water at any time and especially in the presence of an epidemic of any water-borne disease, as the Board would be in a position to determine if any deterioration in the character of the water had occurred at the time and if it might have any influence in the production of the epidemic.

Accordingly, since 1900, chemical and bacteriological examinations of all the public water supplies have been made monthly, and as before, in the case of the Providence supply, twice a month.

These were found to vary in quality from what might be considered as perfect, to a condition which indicated that the continued use of the water might at any time be dangerous to the health of the consumers.

The information thus obtained indicated that one supply, that of East Providence, ought to receive immediate attention, and purification of this supply was secured by means of mechanical filtration. The studies of this process have been available for the installation of other filter plants using this form of filtration. This system has been found to be successful and manageable.

In only four instances are the supplies owned by the cities where the water is used; namely, the city of Providence, the city of Pawtucket, the city of Woonsocket, and the town of Westerly. In the Pawtuxet Valley there are four public water supplies. These are operated by private water companies. The water-sheds of all four are practically free from possible contamination or pollution, being free from habitations and industrial plants. They are called the East Greenwich Water Company, the Pawtuxet Valley Water Company, the Coventry Water Company, and one known as Knight's Spring.

The results of the analyses of this group will be found in the following tables under the heading of Pawtuxet Valley water supply, and indicate that they are of very good quality for surface supplies.

The supply of Westerly, from driven wells, ranks as the best supply in the State.

The supply at Block Island is taken from a pond which receives a certain amount of surface flow. The water-shed is free from habitation. The pond is supposed to be fed also from springs. The quality is fairly good, though, like a number of the waters in the State, liable to be infected with algæ growths of different forms which at times produce a disagreeable odor and taste in the drinking-water.

The supply of Woonsocket is received from a large water-shed which is owned or controlled by the city. The shed is closely watched and inspected. Practically no habitations are located on the area.

The supply is a sanitary water as far as chemical and bacteriological analyses show, but the source, being a surface supply and the storage being in contact with organic and earthy matter, the

water has quite a high color and a slightly vegetable or woody taste. This can be corrected only by filtration.

The city of Newport derives its supply from two or three streams which run through a rather level water-shed, the area of which is fairly well inhabited, and in some instances the streams have been utilized as a drainage disposal system for individual residences.

The color of the water is not very high, but the taste is not of a potable standard. The organic matter is variable with the season.

The town of Jamestown is supplied from two different sources, one called the South Station, and the other located further up the Island of Conanicut and called the North Station. The former supplies a white water, while the latter is darker and does not show as pure a quality when examined chemically and bacteriologically.

The supply at Wakefield and Narragansett Pier is derived from a flat water-shed, not thickly inhabited, but is impounded in reservoirs where much coloring matter is taken up from the decay of vegetable matter such as stumps, trees, and leaves. The only means of securing a white potable water with this supply would be by the use of filtration. Owing to the small consumption, such expense at the present time might not be warranted.

The Bristol Water Works, supplying the towns of Bristol and Warren, derives its supply from surface flow and impounding in two reservoirs. The upper one, being flooded over stumps and decaying vegetable matter, delivers considerable decomposed organic matter to the lower reservoir.

The accumulation of this material for many years in the lower reservoir has produced a condition whereby the water held in storage in the upper reservoir may become increased in color and in all organic constituents after passing through the lower reservoir and before being pumped into the mains.

The location of the lower reservoir was an area which was previously flooded by the tidal salt water from Mount Hope bay. The dam for holding back the fresh water is so near to the high-water



line that at high tides the salt water may exchange its saline qualities from the outside into the storage reservoir above the dam.

With an extremely high tide and a strong wind the salt water from without may at times overcome the baffle-boards or flap-gates of the dam and the water in the lower reservoir becomes saturated with chlorine, and the resulting analyses must necessarily at times be freaky with the variations in the tide and weather conditions.

The color is extremely high. The taste is musty and not enticing to the average person who drinks water.

Spasmodic attempts have been made from time to time to rectify these conditions, but owing to a difference of opinion between the private owners of the supply and the town as to the value of the whole plant, and water company business, naturally no attempt would be made to rectify the character of the water. It is to be hoped that, after the legal masters to whom the business status has been referred make their report, a satisfactory agreement may be arrived at.

Pawtucket continues to maintain inspection of the stream contributing to the supply, and the water stands well with the average unfiltered surface supplies.

The periodical examination of these water supplies gives valuable working data to the Board in the presence of the prevalence of any water-borne or communicable disease.

While typhoid fever and cholera are the only two diseases which are considered as water-borne at the present time, the periodical examination of these supplies gives data to the Board which can be acted upon promptly to the advantage of any town or city which has been afflicted.

If the causation of an epidemic is directly traced to a water supply, the records of the results of the chemical and bacteriological tests allow of certain deductions of exclusion or possible inclusion as a causative factor, thus permitting of immediate determination and also more earnest effort in other directions to determine a possible source of infection.

The following tables present the results of the periodical analyses of the different supplies.

The results are given by months, also by yearly averages, and in groups, where the supplies come from the same neighborhood or where there are samples taken at different points in the course of the flow of the supply.

The figures in the following tables given as the averages for the residue on evaporation, hardness, and alkalinity determinations are to the nearest .05 part per 100,000, that being the accuracy of the methods used for these determinations.

## Providence Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Providence, taken from the Pawtuxet River, at Pumping Station at Pettaconset, collected during the second and fourth week of the month.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.			NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 8.....	sl.	sl.	.42	4.20	1.35	2.85	.0016	.0140	.0134	.0006	.32	.015	.0000	.60	1.03	.49	475
Jan. 22.....	dec.	sl.	.45	4.40	1.65	2.75	.0036	.0236	.0184	.0052	.27	.006	.0000	.67	.79	.35	2728
Feb. 5.....	dec.	sl.	.46	4.35	1.20	3.15	.0026	.0212	.0160	.0052	.23	.008	.0001	.64	.79	.39	6324
Feb. 19.....	v. sl.	v. sl.	.35	3.70	1.15	2.55	.0020	.0152	.0144	.0008	.27	.008	.0001	.46	.79	.30	1855
Mar. 5.....	sl.	sl.	.32	3.75	1.00	2.75	.0018	.0146	.0142	.0004	.26	.011	.0002	.44	.79	.31	1788
Mar. 19.....	sl.	sl.	.35	4.00	1.45	2.55	.0012	.0160	.0140	.0020	.30	.006	.0004	.57	.63	.51	Lost.
April 9.....	dist.	dist.	.49	3.90	1.20	2.70	.0012	.0206	.0170	.0036	.23	.003	.0002	.69	.95	.50	19034
April 23.....	sl.	sl.	.37	3.85	1.60	2.25	.0010	.0170	.0132	.0038	.27	.011	.0002	.60	.95	.40	763
May 7.....	v. sl.	sl.	.36	4.55	1.55	3.00	.0014	.0184	.0162	.0022	.35	.011	.0002	.52	1.11	.70	2480
May 21.....	sl.	dist.	.37	5.05	1.75	3.30	.0012	.0248	.0200	.0048	.34	.009	.0006	.62	1.43	.70	14322
June 11.....	sl.	sl.	.36	4.35	1.05	3.30	.0030	.0192	.0178	.0014	.32	.005	.0001	.47	1.11	.80	270
June 25.....	sl.	dec.	.72	4.70	2.00	2.70	.0014	.0244	.0190	.0054	.29	.005	.0001	.92	1.03	.45	2344
July 9.....	sl.	dist.	.61	4.90	1.75	3.15	.0014	.0252	.0216	.0036	.33	.007	.0002	.71	1.43	.70	3875
July 23.....	sl.	dec.	.60	4.95	1.95	3.00	.0018	.0254	.0194	.0060	.36	.016	.0002	.74	1.27	.69	Lost.
Aug. 7.....	sl.	ec.	.49	5.25	2.10	3.15	.0010	.0276	.0210	.0066	.39	.015	.0002	.69	1.11	.60	2666
Aug. 19.....	sl.	dist.	.49	5.05	1.75	3.30	.0012	.0266	.0232	.0034	.40	.012	.0002	.62	1.56	.90	9114
Sept. 10.....	sl.	dec.	.45	6.25	2.85	3.40	.0016	.0238	.0198	.0040	.40	.012	.0000	.62	1.69	.80	1612
Sept. 24.....	dist.	dist.	.41	4.85	1.55	3.30	.0010	.0214	.0176	.0038	.39	.007	.0001	.50	1.56	.70	2945
Oct. 8.....	sl.	dist.	.37	5.75	1.55	4.20	.0012	.0216	.0176	.0040	.48	.010	.0002	.46	1.56	.95	155
Oct. 22.....	sl.	dec.	.59	5.85	1.80	4.05	.0014	.0260	.0222	.0038	.50	.007	.0002	.77	1.27	.61	616
Nov. 5.....	dist.	dec.	.52	6.80	2.25	4.55	.0012	.0250	.0224	.0026	.45	.010	.0002	.76	1.69	.60	838
Nov. 25.....	sl.	sl.	.47	6.55	2.00	4.55	.0024	.0252	.0212	.0040	.51	.023	.0002	.89	1.56	.95	1012
Dec. 10.....	dist.	dec.	.49	6.65	2.10	4.55	.0030	.0270	.0226	.0044	.53	.027	.0002	.82	1.76	.80	1860
Dec. 24.....	dist.	dist.	.43	6.05	1.80	4.25	.0028	.0246	.0210	.0036	.43	.020	.0006	.78	1.11	.61	4650
Yearly avg....	si.	dist.	.46	5.00	1.70	3.30	.0018	.0220	.0185	.0035	.36	.011	.0002	.65	1.20	.60	3700

## Providence Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Providence, taken from the South Branch of the Pawtuxet River, at Washington, above all sources of pollution, collected during the second and fourth week of the month.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 8.....	0	v. sl.	.54	3.80	1.30	2.50	.0018	.0134	.0128	.0006	.28	.006	.0000	.63	.32	.29	215
Jan. 22.....	v. sl.	v. sl.	.47	3.75	1.30	2.45	.0026	.0158	.0152	.0006	.25	.005	.0000	.56	.48	.30	226
Feb. 5.....	v. sl.	v. sl.	.45	3.35	1.35	2.00	.0014	.0116	.0116	.0000	.20	.004	.0000	.50	.48	.25	303
Feb. 19.....	v. sl.	v. sl.	.39	3.10	.95	2.15	.0016	.0160	.0124	.0036	.20	.005	.0000	.54	.40	.21	223
Mar. 5.....	v. sl.	0	.39	2.60	1.00	1.60	.0010	.0148	.0140	.0008	.18	.005	.0000	.50	.48	.35	1212
Mar. 19.....	v. sl.	sl.	.40	3.10	1.15	1.95	.0010	.0128	.0114	.0014	.23	.004	.0000	.53	.32	.29	83
April 9.....	v. sl.	v. sl.	.48	2.70	1.15	1.55	.0016	.0146	.0132	.0014	.19	.002	.0000	.54	.40	.25	203
April 23.....	v. sl.	v. sl.	.45	2.90	1.20	1.70	.0010	.0128	.0114	.0014	.17	.005	.0000	.57	.32	.22	157
May 7.....	v. sl.	v. sl.	.36	3.25	1.10	2.15	.0022	.0146	.0134	.0012	.21	.001	.0000	.46	.48	.50	113
May 21.....	v. sl.	v. sl.	.40	3.15	1.45	1.70	.0014	.0158	.0144	.0014	.23	.002	.0000	.47	.48	.48	192
June 11.....	v. sl.	v. sl.	.36	3.65	1.20	2.45	.0012	.0168	.0152	.0016	.26	.004	.0000	.47	.48	...	122
June 25.....	v. sl.	sl.	.70	3.80	1.80	2.00	.0018	.0194	.0182	.0012	.20	.001	.0000	.82	.48	.41	277
July 9.....	v. sl.	sl.	.60	3.75	1.60	2.15	.0022	.0196	.0180	.0016	.22	.003	.0000	.74	.55	.42	784
July 23.....	v. sl.	sl.	.50	3.30	1.35	1.95	.0016	.0162	.0150	.0012	.25	.002	.0000	.58	.55	.40	12
Aug. 7.....	sl.	s <sup>l</sup> .	.60	3.90	1.65	2.25	.0028	.0208	.0182	.0026	.22	.005	.0000	.71	.48	.35	216
Aug. 19.....	v. sl.	sl.	.50	3.80	1.50	2.30	.0014	.0194	.0182	.0012	.23	.003	.0000	.65	.55	.30	299
Sept. 10.....	v. sl.	sl.	.45	3.65	1.65	2.00	.0008	.0182	.0168	.0014	.24	.004	.0000	.55	.63	.30	269
Sept. 24.....	v. sl.	v. sl.	.42	3.45	1.30	2.15	.0020	.0176	.0168	.0008	.30	.002	.0000	.52	.55	.55	87
Oct. 8.....	v. sl.	v. sl.	.41	3.70	1.15	2.55	.0024	.0186	.0172	.0014	.31	.004	.0000	.48	.63	.60	68
Oct. 22.....	v. sl.	v. sl.	.50	4.10	1.10	3.00	.0022	.0174	.0164	.0010	.30	.005	.0000	.53	.55	.55	93
Nov. 5.....	v. sl.	sl.	.55	4.80	1.75	3.05	.0028	.0178	.0172	.0006	.40	.006	.0000	.68	.79	.55	81
Nov. 25.....	v. sl.	v. sl.	.55	4.40	.75	3.65	.0028	.0168	.0142	.0026	.35	.006	.0000	.65	.95	.55	1015
Dec. 10.....	v. sl.	v. sl.	.40	3.80	1.10	2.70	.0026	.0166	.0150	.0016	.33	.004	.0000	.51	.71	.50	561
Dec. 24.....	v. sl.	v. sl.	.40	3.85	1.00	2.85	.0050	.0162	.0134	.0028	.30	.007	.0000	.58	.63	.55	1143
Yearly avg...	v. sl.	v. sl	.47	3.55	1.30	2.25	.0020	.0164	.0150	.0014	.25	.004	.0000	.57	.55	.40	331

## Providence Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Providence, taken from the North Branch of the Pawtuxet River at Hope, above all sources of pollution, collected during the second and fourth week of the month.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.			NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 8.....	v. sl.	v. sl.	.38	3.20	1.55	1.65	.0006	.0114	.0114	.0000	.22	.012	.0000	.50	.48	.40	217
Jan. 22.....	sl.	v. s.	.41	3.30	1.20	2.10	.0014	.0170	.0158	.0012	.21	.005	.0000	.54	.48	.26	2062
Feb. 5.....	v. sl.	v. sl.	.41	2.90	1.45	1.45	.0012	.0154	.0128	.0026	.18	.005	.0000	.50	.32	.30	1608
Feb. 19.....	v. sl.	0	.30	2.75	1.05	1.70	.0008	.0108	.0106	.0002	.21	.004	.0000	.39	.40	.30	326
Mar. 5.....	v. sl.	0	.29	3.00	.90	2.10	.0018	.0150	.0118	.0032	.18	.007	.0000	.38	.55	.42	793
Mar. 19.....	v. sl.	v. sl.	.30	2.60	.70	1.90	.0004	.0096	.0094	.0002	.21	.004	.0000	.39	.48	.40	113
April 9.....	v. sl.	v. sl.	.48	3.00	1.20	1.80	.0012	.0146	.0128	.0018	.19	.001	.0000	.56	.32	.29	1459
April 23.....	v. sl.	v. sl.	.30	2.65	.40	2.25	.0010	.0096	.0096	.0000	.19	.005	.0000	.43	.48	.41	243
May 7.....	v. sl.	v. sl.	.31	3.25	1.10	2.15	.0016	.0138	.0132	.0006	.22	.005	.0000	.38	.48	.50	201
May 21.....	v. sl.	v. sl.	.32	3.20	1.15	2.05	.0012	.0144	.0122	.0022	.22	.001	.0000	.39	.63	.55	309
June 11.....	v. sl.	v. sl.	.30	3.15	1.10	2.05	.0010	.0154	.0146	.0008	.25	.004	.0000	.40	.63	.55	104
June 25.....	v. sl.	sl.	.69	3.55	2.05	1.50	.0016	.0174	.0154	.0020	.19	.002	.0000	.81	.48	.41	166
July 9.....	v. sl.	v. sl.	.48	4.70	1.70	3.00	.0014	.0186	.0170	.0016	.19	.002	.0000	.63	1.03	.29	260
July 23.....	v. sl.	sl.	.54	3.60	1.40	2.20	.0012	.0172	.0152	.0020	.24	.003	.0000	.66	.55	.40	146
Aug. 7.....	v. sl.	sl.	.50	3.60	1.35	2.25	.0014	.0186	.0178	.0008	.20	.005	.0000	.66	.63	.55	Lost.
Aug. 19.....	v. sl.	v. sl.	.39	3.50	1.40	2.10	.0012	.0164	.0156	.0008	.23	.003	.0000	.51	.95	.55	248
Sept. 10.....	v. sl.	sl.	.46	3.70	1.90	1.80	.0006	.0180	.0162	.0018	.24	.005	.0000	.60	.79	.60	210
Sept. 24.....	v. sl.	v. sl.	.35	3.45	1.45	2.00	.0010	.0142	.0128	.0014	.25	.002	.0000	.43	.55	.55	122
Oct. 8.....	v. sl.	v. sl.	.36	3.50	1.10	2.40	.0010	.0150	.0140	.0010	.29	.004	.0000	.46	.63	.55	169
Oct. 22.....	v. sl.	v. sl.	.65	4.85	2.05	2.80	.0010	.0212	.0186	.0026	.38	.005	.0000	.84	.79	.40	184
Nov. 5.....	v. sl.	sl.	.42	4.30	1.65	2.65	.0020	.0154	.0146	.0008	.36	.006	.0000	.57	.95	.45	234
Nov. 25.....	v. sl.	v. sl.	.42	3.95	.75	3.20	.0020	.0144	.0138	.0006	.33	.006	.0000	.59	.95	.55	397
Dec. 10.....	v. sl.	v. sl.	.37	4.15	1.25	2.90	.0026	.0150	.0146	.0004	.35	.013	.0000	.48	.71	.50	898
Dec. 24.....	v. sl.	v. sl.	.45	3.60	1.35	2.25	.0018	.0166	.0148	.0018	.29	.007	.0000	.65	.48	.40	1899
Yearly avg...	v. sl.	v. sl.	.41	3.50	1.30	2.20	.0013	.0152	.0139	.0013	.24	.005	.0000	.53	.60	.45	538



## Providence Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Providence, taken from the Tap in the Laboratory of the State Board of Health, in Providence, collected during the second and fourth week of the month.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 8.....	sl.	sl.	.46	4.05	1.45	2.60	.0022	.0126	.0118	.0008	.32	.016	.0000	.55	.87	.59	82
Jan. 22.....	sl.	sl.	.41	3.95	1.10	2.85	.0018	.0138	.0124	.0014	.36	.011	.0000	.48	.95	.45	365
Feb. 5.....	sl.	v. sl.	.39	4.10	1.15	2.95	.0020	.0136	.0126	.0010	.29	.008	trace.	.44	.87	.42	285
Feb. 19.....	v. sl.	sl.	.35	3.80	1.35	2.45	.0014	.0130	.0122	.0008	.29	.010	trace.	.41	.87	.35	194
Mar. 5.....	v. sl.	sl.	.33	3.95	1.30	2.65	.0036	.0140	.0130	.0010	.25	.006	trace.	.42	1.19	.45	289
Mar. 19.....	sl.	sl.	.30	3.60	1.05	2.55	.0032	.0124	.0106	.0018	.27	.005	.0000	.48	.63	.59	102
April 9.....	sl.	sl.	.40	3.60	1.10	2.50	.0008	.0148	.0120	.0028	.30	.005	.0000	.48	.79	.45	103
April 23.....	v. sl.	sl.	.35	3.15	.85	2.30	.0008	.0124	.0118	.0006	.25	.010	.0000	.50	.95	.42	97
May 7.....	v. sl.	sl.	.31	3.50	.90	2.60	.0012	.0124	.0116	.0008	.32	.011	.0001	.37	.95	.69	119
May 21.....	v. sl.	sl.	.32	3.55	1.10	2.45	.0010	.0154	.0100	.0054	.36	.016	.0004	.38	1.43	.70	212
June 11.....	v. sl.	v. sl.	.31	4.65	1.70	2.95	.0008	.0146	.0134	.0012	.39	.011	.0000	.37	1.11	.84	341
June 25.....	v. sl.	sl.	.62	4.50	1.60	2.90	.0012	.0174	.0160	.0014	.32	.011	.0000	.69	1.11	.65	215
July 9.....	sl.	sl.	.55	4.60	1.55	3.05	.0010	.0184	.0158	.0026	.34	.009	.0001	.59	1.11	.60	419
July 23.....	sl.	sl.	.47	4.40	1.20	3.20	.0004	.0176	.0154	.0022	.36	.003	.0001	.54	1.43	.65	430
Aug. 7.....	sl.	sl.	.45	5.10	2.05	3.05	.0010	.0188	.0176	.0012	.40	.013	.0000	.53	1.11	.75	Lost.
Aug. 19.....	v. sl.	sl.	.40	4.90	1.70	3.20	.0010	.0168	.0152	.0016	.37	.012	.0000	.49	1.27	.75	128
Sept. 10.....	v. sl.	sl.	.36	4.70	2.20	2.50	.0016	.0166	.0138	.0028	.40	.012	.0000	.44	1.43	.80	106
Sept. 24.....	sl.	sl.	.38	4.45	1.30	3.15	.0008	.0160	.0140	.0020	.38	.010	.0000	.42	1.43	.70	143
Oct. 8.....	v. sl.	sl.	.35	5.10	1.10	4.00	.0010	.0164	.0138	.0026	.44	.010	.0001	.38	1.56	.82	56
Oct. 22.....	sl.	sl.	.45	5.30	1.05	4.25	.0006	.0174	.0156	.0018	.49	.009	.0001	.49	1.11	.71	290
Nov. 5.....	sl.	sl.	.42	5.30	1.65	3.65	.0014	.0180	.0162	.0018	.61	.010	.0002	.51	1.43	.72	83
Nov. 25.....	sl.	sl.	.45	5.50	1.40	4.10	.0010	.0174	.0156	.0018	.50	.021	.0002	.60	1.56	.80	600
Dec. 10.....	sl.	sl.	.41	5.20	1.05	4.15	.0022	.0178	.0164	.0014	.50	.028	.0002	.53	1.50	.80	1017
Dec. 24.....	sl.	sl.	.41	5.30	1.25	4.05	.0008	.0192	.0158	.0034	.48	.018	.0004	.56	1.19	.75	7324
Yearly avg...	sl. to v. sl.	sl.	.40	4.45	1.35	3.10	.0014	.0157	.0139	.0018	.37	.011	.0001	.49	1.15	.65	565



## Providence Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Providence, giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON EVAPO- RATION.			AMMONIA.			NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
		Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
						Total.	In Solution.	In Suspension.							
Pettaconsett—															
1900.....	.45	5.80	1.90	3.90	.0014	.0222	.0182	.0040	.46	.014	.0003	.56	1.45	1.00	3395
1901.....	.44	5.85	2.10	3.75	.0013	.0248	.0207	.0041	.42	.013	.0003	.67	1.40	.80	4032
1902.....	.42	5.05	1.75	3.30	.0022	.0230	.0192	.0038	.39	.012	.0002	.62	1.15	.65	6650
1903.....	.46	5.00	1.70	3.30	.0018	.0220	.0185	.0035	.36	.011	.0002	.65	1.20	.60	3700
Washington—															
1900.....	.46	3.75	1.50	2.25	.0017	.0173	.0164	.0009	.28	.006	.0000	.55	.60	.60	1072
1901.....	.45	3.85	1.60	2.25	.0015	.0173	.0163	.0010	.28	.004	.0000	.59	.65	.50	792
1902.....	.43	3.55	1.40	2.15	.0020	.0170	.0162	.0008	.28	.005	.0002*	.55	.50	.40	633
1903.....	.47	3.55	1.30	2.25	.0020	.0164	.0150	.0014	.25	.004	.0000	.57	.55	.40	331
Hope—															
1900.....	.39	3.60	1.40	2.20	.0007	.0155	.0142	.0013	.25	.007	.0000	.48	.70	.60	536
1901.....	.40	3.95	1.50	2.45	.0005	.0154	.0145	.0009	.26	.005	.0000	.53	.70	.50	694
1902.....	.41	3.55	1.40	2.15	.0011	.0165	.0155	.0010	.25	.006	.0000	.56	.55	.40	1235
1903.....	.41	3.50	1.30	2.20	.0013	.0152	.0139	.0013	.24	.005	.0000	.53	.60	.45	538
Laboratory Tap—															
1900.....															
1901.....	.41	6.20	1.95	4.25	.0005	.0224	.0193	.0031	.49	.013	.0001	.57	1.70	.95	1600
1902.....	.39	4.80	1.55	3.25	.0013	.0179	.0154	.0025	.41	.013	.0000	.51	1.15	.65	615
1903.....	.40	4.45	1.35	3.10	.0014	.0157	.0139	.0018	.37	.011	.0001	.49	1.15	.65	565

\*All determinations 0 except one.

## Pawtuxet Valley Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Pawtuxet Valley, controlled by the Pawtuxet Valley Water Company, the sample being taken in the village of Riverpoint.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.			NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 19.....	v. sl.	0	.39	3.45	1.00	2.45	.0024	.0148	.0144	.0004	.36	.031	.0000	.42	1.11	.62	103
Feb. 16.....	v. sl.	v. sl.	.34	3.45	1.10	2.35	.0012	.0146	.0146	.0000	.29	.015	.0000	.40	.71	.40	86
Mar. 17.....	sl.	v. sl.	.47	3.55	1.15	2.40	.0016	.0140	.0138	.0002	.26	.016	.0000	.45	.63	.59	211
April 13.....	v. sl.	0	.30	3.25	1.15	2.10	.0006	.0118	.0114	.0004	.25	.007	.0000	.40	.79	.49	68
May 28.....	sl.	v. sl.	.30	3.40	1.15	2.25	.0014	.0158	.0144	.0014	.31	.009	.0000	.33	1.27	.69	.....
June 16.....	v. sl.	v. sl.	.31	3.35	1.30	2.05	.0010	.0164	.0148	.0016	.32	.008	.0000	.37	1.43	.85	.....
July 20.....	v. sl.	v. sl.	.30	3.70	.90	2.80	.0010	.0162	.0156	.0006	.30	.009	.0000	.34	1.11	.89	Lost.
Aug. 10.....	0	v. sl.	.27	4.10	1.20	2.90	.0012	.0150	.0144	.0006	.32	.009	.0000	.34	1.50	1.09	Lost.
Sept. 21.....	v. sl.	trace.	.20	4.20	.85	3.35	.0014	.0152	.0150	.0002	.34	.006	.0000	.26	1.27	1.18	1286
Oct. 19.....	v. sl.	0	.20	4.15	1.30	2.85	.0010	.0140	.0140	.0000	.35	.005	.0000	.31	1.76	1.00	2269
Nov. 9.....	v. sl.	trace.	.20	4.05	1.55	2.50	.0010	.0144	.0140	.0004	.38	.003	.0000	.30	1.69	1.15	47
Dec. 21.....	sl.	v. sl.	.20	4.05	1.35	2.70	.0012	.0164	.0150	.0014	.40	.005	.0000	.30	1.27	1.20	11
Yearly avg.....	v. sl.	v. sl.	.29	3.70	1.15	2.55	.0013	.0149	.0143	.0006	.32	.011	.0000	.35	1.20	.85	510

*Chemical and Bacteriological Examination of a Water Supply in the Pawtuxet Valley, taken from a supply known as Knight's Spring, or Fountain, the sample being taken in the village of Riverpoint*

Jan. 19.....	0	0	.00	6.45	2.30	4.15	.0004	.0018	.....	.....	.90	.440	.0000	.00	2.34	.29	21
Feb. 14.....	0	0	.00	5.70	1.95	3.75	.0000	.0018	.....	.....	.70	.300	.0000	.01	1.95	.29	108
Mar. 17.....	0	0	.00	5.60	1.40	4.20	.0002	.0022	.....	.....	.76	.282	.0000	.03	2.03	.32	566
April 13.....	0	0	.00	5.50	1.45	4.05	.0000	.0012	.....	.....	.66	.300	.0000	.03	2.03	.30	26
May 28.....	0	0	.00	5.25	1.60	3.65	.0002	.0016	.....	.....	.60	.260	.0000	.00	2.34	.35	83
June 16.....	0	0	.00	6.50	2.40	4.10	.0002	.0018	.....	.....	.68	.326	.0000	.00	2.15	.50	1103
July 20.....	0	0	.00	6.95	1.80	5.15	.0000	.0010	.....	.....	.70	.308	.0000	.00	2.03	.39	659
Aug. 10.....	0	0	.00	7.65	3.25	4.40	.0004	.0014	.....	.....	.74	.317	.0000	.02	2.15	.55	Lost.
Sept. 21.....	0	0	.00	6.15	1.45	4.70	.0002	.0016	.....	.....	.70	.326	.0000	.00	1.95	.50	10
Oct. 19.....	0	0	.00	7.40	2.60	4.80	.0000	.0008	.....	.....	.72	.396	.0000	.00	2.41	.50	821
Nov. 9.....	0	0	.00	6.85	1.70	5.15	.0000	.0014	.....	.....	.72	.388	.0000	.00	2.03	.50	56
Dec. 21.....	0	0	.00	6.20	1.80	4.40	.0000	.0022	.....	.....	.78	.352	.0000	.00	2.34	.50	441
Yearly avg.....	0	0	.00	6.35	2.00	4.35	.0001	.0016	.....	.....	.72	.333	.0000	.01	2.15	.40	354

## Pawtuxet Valley Water Supply.

*Chemical and Bacteriological Examination of a Water Supply in the Pawtuxet Valley, controlled by the Coventry Water Company, the sample being taken in the village of Arctic Centre.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.				
								Total.	In Solution.	In Suspension.							
Jan. 22.....	0	0	.05	1.70	.35	1.35	.0020	.0078	.....	.....	.31	.002	.0000	.09	.32	.29	806
Feb. 23.....	0	0	.01	1.90	.50	1.40	.0004	.0076	.....	.....	.29	.000	.0000	.09	.32	.29	225
Mar. 17.....	sl.	v. sl.	.20	2.10	.35	1.75	.0002	.0086	.....	.....	.25	.003	.0000	.12	.24	.29	324
April 13.....	0	0	.02	1.80	.50	1.30	.0006	.0052	.....	.....	.25	.001	.0000	.11	.16	....	42
May 28.....	0	tr.	.02	1.85	.40	1.45	.0002	.0064	.....	.....	.28	.003	.0000	.06	.40	.25	.....
June 16.....	0	0	.01	2.35	.95	1.40	.0004	.0076	.....	.....	.27	.002	.0000	.06	.32	.30	1159
July 20.....	0	0	.00	1.80	.40	1.40	.0002	.0060	.....	.....	.28	.007	.0000	.05	.32	.25	295
Aug. 10.....	0	0	.01	2.45	1.05	1.40	.0006	.0074	.....	.....	.27	.002	.0000	.09	.32	.30	Lost.
Sept. 21.....	0	0	.02	2.00	.70	1.30	.0002	.0080	.....	.....	.28	.002	.0000	.02	.32	.25	1139
Oct. 19.....	0	0	.02	1.95	.40	1.55	.0004	.0078	.....	.....	.26	.002	.0000	.06	.32	.25	3348
Nov. 9.....	0	0	.00	1.55	.55	1.00	.0002	.0082	.....	.....	.31	.000	.0000	.03	.48	.25	17
Dec. 21.....	0	v. sl.	.01	2.20	.85	1.35	.0006	.0088	.....	.....	.33	.002	.0000	.08	.63	.30	99
Yearly avg..	0	0	.03	1.95	.55	1.40	.0005	.0075	.....	.....	.28	.002	.0000	.07	.35	.25	745

## East Greenwich Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the town of East Greenwich,  
the sample being taken from the tap in the office of the health officer.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.				
								Total.	In Solution.	In Suspension.							
Jan. 20.....	0	v. sl.	.35	4.60	1.10	3.50	.0006	.0090	.0084	.0006	.44	.006	.0000	.38	1.11	.71	51
Feb. 16.....	0	v. sl.	.30	4.00	1.30	2.70	.0016	.0110	.0100	.0010	.36	.006	.0000	.39	.87	.40	59
Mar. 17.....	v. sl.	0	.38	3.80	1.10	2.70	.0014	.0088	.0086	.0002	.39	.010	.0000	.42	1.43	1.00	17
April 23.....	v. sl.	sl.	.30	4.15	1.35	2.80	.0010	.0096	.0078	.0018	.35	.015	.0000	.39	.79	.69	176
May 20.....	v. sl.	v. sl.	.30	3.10	1.00	2.10	.0010	.0092	.0086	.0006	.30	.010	.0000	.32	1.11	1.09	273
June 15.....	sl.	v. sl.	1.06	5.20	2.10	3.10	.0016	.0238	.0234	.0004	.35	.007	.0000	1.12	1.27	.69	2170
July 22.....	v. sl.	sl.	.79	5.60	2.50	3.10	.0008	.0206	.0180	.0026	.30	.007	.0000	.95	1.82	1.01	436
Aug. 10.....	v. sl.	v. sl.	.80	5.05	2.05	3.00	.0018	.0172	.0166	.0006	.39	.010	.0000	.91	1.11	.60	Lost.
Sept. 24.....	v. sl.	tr.	.25	4.65	1.20	3.45	.0002	.0076	.0074	.0002	.45	.014	.0000	.24	1.63	1.58	7
Oct. 12.....	v. sl.	sl.	.28	4.65	1.05	3.60	.0002	.0088	.0080	.0008	.47	.006	.0000	.30	1.56	1.40	124
Nov. 24.....	v. sl.	v. sl.	.55	5.50	1.15	4.35	.0014	.0138	.0130	.0008	.52	.012	.0000	.74	1.43	.72	.....
Dec. 23.....	v. sl.	v. sl.	.63	5.25	1.60	3.65	.0006	.0154	.0144	.0010	.45	.011	.0000	.76	1.19	.95	1282
Yearly avg...	v. sl.	v. sl.	.50	4.60	1.45	3.15	.0010	.0129	.0120	.0009	.40	.010	.0000	.58	1.30	.90	459

## Kent County Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of Kent County, giving the Average for the Years 1900–1903, Grouped for Comparison of the Quality of the Water of the Different Supplies.*

(Parts in 100,000.)

DATE OF COLLECTION.	RESIDUE ON EVAPO- RATION.				AMMONIA.			NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.		
	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.		Chlorine.	As Nitrates.					As Nitrites.	
						Total.	In Solution.								In Suspension.
Pawtuxet Valley—															
1900.....	.33	3.70	1.40	2.30	.0008	.0166	.0154	.0012	.32	.011	.0000	.36	.65	.80	527
1901.....	.29	3.70	1.45	2.25	.0012	.0159	.0151	.0008	.35	.015	.0000	.39	.80	.55	2341
1902.....	.31	3.50	1.25	2.25	.0022	.0165	.0158	.0007	.33	.014	.0000	.37	.80	.55	888
1903.....	.29	3.70	1.15	2.55	.0013	.0149	.0143	.0006	.32	.011	.0000	.35	1.20	.85	510
Knight's Spring—															
1900.....	.00	5.55	2.10	3.45	.0001	.0013	.....	.....	.64	.237	.0000	.01	1.65	.30	1142
1901.....	.00	6.40	2.20	4.20	.0004	.0020	.....	.....	.81	.321	.0000	.01	2.05	.30	373
1902.....	.00	6.15	2.20	3.95	.0001	.0015	.....	.....	.76	.320	.0000	.00	2.00	.30	571
1903.....	.00	6.35	2.00	4.35	.0001	.0016	.....	.....	.72	.333	.0000	.01	2.15	.40	354
Coventry Water Co.—															
1900.....	.05	2.05	.60	1.45	.0003	.0063	.....	.....	.28	.005	.0000	.08	.25	.30	2154
1901.....	.04	2.20	.70	1.50	.0002	.0074	.....	.....	.29	.003	.0000	.08	.30	.25	1373
1902.....	.03	1.95	.65	1.30	.0005	.0068	.....	.....	.30	.004	.0000	.07	.25	.20	2478
1903.....	.03	1.95	.55	1.40	.0005	.0075	.....	.....	.28	.002	.0000	.07	.35	.25	745
East Greenwich—															
1900.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1901.....	.40	4.50	1.45	3.05	.0003	.0114	.0104	.0010	.40	.009	.0000	.44	1.15	.85	2144
1902.....	.30	4.40	1.20	3.20	.0005	.0089	.0081	.0008	.41	.011	.0000	.36	1.35	1.05	649
1903.....	.50	4.60	1.45	3.15	.0010	.0129	.0120	.0009	.40	.010	.0000	.58	1.30	.90	459



## Woonsocket Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Woonsocket,  
the sample being taken from the First Impounding Reservoir.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.			NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 26.....	sl.	v. sl.	.56	3.85	1.55	2.30	.0036	.0392	.0268	.0124	.26	.005	.0000	.87	.79	.29	350
Feb. 23.....	v. sl.	sl.	.54	3.80	1.55	2.25	.0033	.0318	.0230	.0088	.25	.003	.0000	.66	.71	.41	102
Mar. 24.....	v. sl.	v. sl.	.37	3.00	1.05	1.95	.0014	.0174	.0132	.0042	.17	.001	.0000	.50	.32	.31	137
April 27.....	v. sl.	v. sl.	.40	2.85	1.30	1.55	.0014	.0222	.0160	.0062	.19	.003	.0000	.58	.79	.50	233
May 28.....	sl.	v. sl.	.50	4.30	1.90	2.40	.0028	.0208	.0192	.0016	.23	.011	.0000	.62	.95	.79	156
June 15.....	sl.	sl.	.61	3.10	1.40	1.70	.0010	.0310	.0212	.0098	.20	.001	.0000	.60	.95	.42	611
July 13.....	v. sl.	sl.	.50	3.65	1.65	2.00	.0040	.0350	.0240	.0110	.20	.001	.0000	.63	.63	.45	521
Aug. 10.....	sl.	dist.	.55	3.00	1.40	1.60	.0016	.0284	.0244	.0040	.20	.002	.0000	.58	.63	.41	Lost.
Sept. 21.....	dist.	dec.	.59	3.60	1.60	2.00	.0026	.0358	.0266	.0092	.20	.003	.0000	.65	.48	.49	116
Oct. 19.....	v. sl.	sl.	.50	3.10	1.30	1.80	.0016	.0368	.0258	.0110	.22	.001	.0000	.54	.55	.35	204
Nov. 15.....	dist.	sl.	.43	3.15	1.30	1.85	.0024	.0292	.0240	.0052	.25	.004	.0000	.49	.63	.40	78
Dec. 14.....	v. sl.	v. sl.	.42	3.00	1.45	1.55	.0022	.0254	.0238	.0016	.25	.009	.0000	.57	.63	.41	44
Yearly avg....	sl.	sl.	.50	3.35	1.45	1.90	.0024	.0294	.0223	.0071	.22	.004	.0000	.61	.65	.45	232

*Chemical and Bacteriological Examination of the Water Supply of the City of Woonsocket,  
the sample being taken from the Pumping Station.*

Jan. 26.....	v. sl.	v. sl.	.51	4.05	1.60	2.45	.0018	.0208	.0192	.0016	.26	.005	.0000	.63	.95	.40	Liq.
Feb. 23.....	v. sl.	v. sl.	.45	3.40	1.20	2.20	.0012	.0168	.0158	.0010	.24	.003	.0000	.50	.63	.49	397
Mar. 24.....	v. sl.	v. sl.	.51	2.90	1.35	1.55	.0008	.0140	.0132	.0008	.20	.001	.0000	.60	.48	.41	3720
April 27.....	v. sl.	0	.46	3.10	1.25	1.85	.0006	.0142	.0134	.0008	.20	.005	.0000	.59	.95	.65	197
May 8.....	sl.	sl.	.45	3.65	1.75	1.90	.0012	.0254	.0194	.0060	.20	.005	.0000	.62	.79	.70	67
June 15.....	sl.	sl.	.94	4.60	2.30	2.30	.0058	.0304	.0268	.0036	.21	.006	.0000	1.03	1.27	.50	1674
July 13.....	v. sl.	sl.	.71	4.40	1.90	2.50	.0030	.0254	.0224	.0030	.22	.003	.0000	.84	1.03	.70	1536
Aug. 10.....	v. sl.	tr.	.75	4.30	2.10	2.20	.0038	.0236	.0232	.0004	.23	.014	.0000	.92	1.11	.59	Lost.
Sept. 21.....	sl.	sl.	.60	4.70	2.00	2.70	.0018	.0246	.0210	.0036	.30	.006	.0002	.72	1.19	.70	353
Oct. 19.....	sl.	sl.	.90	5.45	2.15	3.30	.0024	.0280	.0272	.0008	.47	.003	.0000	1.13	1.27	.55	3069
Nov. 15.....	sl.	sl.	.54	4.35	1.35	3.00	.0020	.0202	.0192	.0010	.40	.007	.0000	.65	1.43	.71	80
Dec. 14.....	v. sl.	v. sl.	.55	4.45	1.65	2.80	.0016	.0194	.0178	.0016	.37	.014	.0000	.70	1.11	.65	3224
Yearly avg...	v. sl.	v. sl.	.61	4.10	1.70	2.40	.0022	.0219	.0199	.0020	.28	.006	.0000	.74	1.00	.60	1431



## Woonsocket Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Woonsocket,  
the sample being taken from the tap in the office of the Superintendent of the Woonsocket  
Water Works.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrates.
								Total.	In Solution.	In Suspension.							
Jan. 26.....	v. sl.	v. sl.	.51	3.40	1.40	2.00	.0018	.0214	.0188	.0026	.23	.007	.0000	.62	.48	.30	2232
Feb. 23.....	v. sl.	v. sl.	.44	3.50	1.10	2.40	.0014	.0168	.0162	.0006	.21	.003	.0000	.50	.63	.50	346
Mar. 24.....	v. sl.	sl.	.60	3.80	1.65	2.15	.0012	.0210	.0148	.0062	.18	.002	.0000	.76	.48	.40	3472
April 27.....	v. sl.	v. sl.	.46	3.05	1.35	1.70	.0008	.0156	.0152	.0004	.21	.005	.0000	.61	.87	.65	267
May 28.....	sl.	dec.	.51	4.80	1.75	3.05	.0018	.0266	.0192	.0074	.22	.006	.0000	.66	1.11	.75	169
June 15.....	sl.	v. sl.	1.00	4.85	2.40	2.45	.0040	.0312	.0284	.0028	.22	.007	.0000	1.16	1.11	.50	2294
July 13.....	sl.	sl.	.71	4.20	1.65	2.55	.0022	.0242	.0210	.0032	.22	.006	.0000	.77	1.03	.70	5394
Aug. 10.....	dist.	dec.	.90	5.25	2.30	2.95	.0024	.0304	.0252	.0052	.22	.008	.0000	1.05	1.27	.51	Lost.
Sept. 21.....	sl.	v. sl.	.45	4.45	1.70	2.75	.0010	.0166	.0164	.0002	.25	.010	.0000	.49	1.19	.85	2542
Oct. 19.....	sl.	sl.	.90	5.50	2.35	3.15	.0012	.0260	.0248	.0012	.47	.005	.0000	1.07	1.27	.55	761
Nov. 16.....	sl.	sl.	.55	4.10	1.25	2.85	.0018	.0198	.0192	.0006	.41	.007	.0000	.74	1.43	.71	53
Dec. 14.....	v. sl.	v. sl.	.55	4.40	1.35	3.05	.0014	.0190	.0182	.0008	.37	.012	.0000	.70	1.11	.65	5208
Yearly avg...	sl.	sl.	.63	4.30	1.70	2.60	.0018	.0224	.0198	.0026	.27	.007	.0000	.76	1.00	.60	2067

## Woonsocket Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Woonsocket, giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON EVAPO- RATION.			AMMONIA.				Chlorine.	NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
		Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.				As Nitrates.	As Nitrites.					
						Total.	In Solution.	In Suspension.								
Reservoir 3—																
1900.....	.82	4.85	2.85	2.00	.0010	.0507	.0350	.0157	.24	.006	.0000	.96	.75	.65	603.	
1901.....	.58	4.15	2.35	1.80	.0034	.0469	.0317	.0152	.22	.004	.0000	.82	.60	.50	819	
1902.....	.56	3.80	2.10	1.70	.0061	.0384	.0277	.0107	.23	.005	.0000	.71	.55	.40	1068	
1903.....	.50	3.35	1.45	1.90	.0024	.0294	.0223	.0071	.22	.004	.0000	.61	.65	.45	232	
Pumping Station—																
1900.....	.72	4.70	2.25	2.45	.0017	.0311	.0256	.0055	.25	.008	.0000	.81	.85	.70	668	
1901.....	.63	4.20	2.00	2.20	.0032	.0247	.0231	.0016	.24	.006	.0000	.77	.90	.55	882	
1902.....	.59	4.35	1.75	2.60	.0034	.0252	.0222	.0030	.25	.009	.0000	.67	.80	.55	668	
1903.....	.61	4.10	1.70	2.40	.0022	.0219	.0199	.0020	.28	.006	.0000	.74	1.00	.60	1431	
Supt's Office—																
1900.....	.70	4.90	2.30	2.60	.0014	.0292	.0232	.0060	.24	.010	.0000	.77	.90	.75	370	
1901.....	.64	4.65	2.10	2.55	.0017	.0277	.0226	.0051	.24	.007	.0000	.79	1.00	.60	1177	
1902.....	.55	4.00	1.60	2.40	.0020	.0234	.0207	.0027	.25	.009	.0000	.63	.90	.55	1283	
1903.....	.63	4.30	1.70	2.60	.0018	.0224	.0198	.0026	.27	.007	.0000	.76	1.00	.60	2067	

## Pawtucket Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Pawtucket,  
the Sample being taken from the Intake at the Happy Hollow Pond.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.				
								Total.	In Solution.	In Suspension.							
Jan. 26.....	sl.	v. sl.	.37	4.05	1.60	2.45	.0022	.0152	.0142	.0010	.30	.009	.0000	.48	1.27	.60	1705
Feb. 26.....	v. sl.	v. sl.	.25	3.85	.85	3.00	.0016	.0118	.0114	.0004	.31	.005	.0000	.36	1.19	.83	61
Mar. 10.....	clay. dec.	clay.	.55	6.70	1.15	5.55	.0020	.0150	.0144	.0006	.24	.012	.0000	.48	1.03	.60	.....
Mar. 30.....		v. sl.	v. sl.	.35	3.85	1.35	2.50	.0012	.0128	.0128	.0000	.24	.007	.0000	.47	1.19	.80
April 27.....	v. sl.	v. sl.	.22	3.95	1.45	2.50	.0022	.0110	.0096	.0014	.31	.010	.0000	.33	1.43	1.05	93
May 26.....	sl.	sl.	.20	4.30	1.20	3.10	.0052	.0182	.0142	.0040	.35	.007	.0002	.22	1.82	1.40	385
June 29.....	v. sl.	sl.	.34	4.10	1.50	2.60	.0040	.0156	.0152	.0004	.28	.007	tr.	.43	1.43	1.20	1860
July 20.....	v. sl.	sl.	.32	3.50	1.20	2.30	.0042	.0180	.0160	.0020	.29	.006	.0000	.37	1.56	1.05	535
Aug. 11.....	v. sl.	sl.	.30	3.85	1.05	2.80	.0042	.0150	.0130	.0020	.30	.010	tr.	.40	1.56	1.15	Lost.
Sept. 28.....	v. sl.	v. sl.	.25	3.80	.95	2.85	.0030	.0122	.0114	.0008	.40	.010	.0000	.23	1.82	1.35	516
Oct. 26.....	v. sl.	v. sl.	.20	4.00	1.15	2.85	.0050	.0140	.0130	.0010	.37	.006	.0000	.34	1.35	1.00	503
Nov. 23.....	v. sl.	v. sl.	.15	3.50	.85	2.65	.0028	.0112	.0104	.0008	.33	.018	.0001	.31	1.43	1.10	899
Dec. 28.....	dec.	dec.	.40	5.55	1.35	4.20	.0016	.0152	.0128	.0024	.39	.020	.0001	.32	1.76	1.10	1640
Yearly avg...	v. sl.	v. sl.	.30	4.25	1.20	3.05	.0030	.0142	.0129	.0013	.32	.010	.0000	.36	1.45	1.00	783

*Chemical and Bacteriological Examination of the Water Supply of the City of Pawtucket,  
the Sample being taken from the tap in the Boiler Room of Pumping Station No. 3.*

Jan. 26.....	v. sl.	v. sl.	.35	3.90	1.30	2.60	.0018	.0132	.0132	.0000	.28	.009	.0000	.43	1.11	.60	658
Feb. 26.....	v. sl.	v. sl.	.23	4.20	1.05	3.35	.0028	.0112	.0104	.0008	.31	.005	.0000	.32	1.27	.80	923
Mar. 10.....	dec.	dec.	.55	6.40	1.55	4.85	.0032	.0136	.0130	.0006	.25	.012	.0000	.42	1.03	.60	.....
Mar. 30.....	0	v. sl.	.34	3.30	1.10	2.20	.0012	.0118	.0108	.0010	.24	.008	.0000	.39	1.27	.75	23
April 27.....	v. sl.	0	.20	3.40	1.05	2.35	.0032	.0084	.0084	.0000	.29	.007	.0000	.31	1.50	1.00	20
May 26.....	sl.	sl.	.19	3.85	.75	3.10	.0034	.0124	.0124	.0000	.35	.008	.0002	.22	1.82	1.39	917
June 29.....	v. sl.	v. sl.	.32	4.20	1.65	2.55	.0020	.0150	.0146	.0004	.27	.009	tr.	.41	1.43	1.20	*
July 20.....	v. sl.	v. sl.	.32	3.60	1.05	2.55	.0024	.0154	.0134	.0020	.29	.006	.0000	.37	1.56	1.05	916
Aug. 11.....	v. sl.	tr.	.25	4.25	1.35	2.90	.0038	.0126	.0124	.0002	.30	.010	.0001	.40	1.56	1.15	Lost.
Sept. 28.....	v. sl.	v. sl.	.22	3.60	.90	2.70	.0042	.0106	.0100	.0006	.39	.010	.0000	.21	1.82	1.35	7812
Oct. 26.....	v. sl.	v. sl.	.20	3.95	1.30	2.65	.0050	.0158	.0152	.0006	.37	.006	.0000	.27	1.35	1.00	465
Nov. 23.....	v. sl.	v. sl.	.15	3.65	.75	2.90	.0044	.0100	.0096	.0004	.33	.014	.0000	.22	1.56	1.10	260
Dec. 28.....	dec.	dec.	.40	5.60	1.30	4.30	.0020	.0130	.0128	.0002	.39	.021	.0001	.30	1.69	1.10	971
Yearly avg...	v. sl.	v. sl.	.29	4.15	1.15	3.00	.0030	.0125	.0120	.0005	.31	.010	.0000	.33	1.45	1.00	1297

\* Too numerous, stood 2 days.

## Pawtucket Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Pawtucket, giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
		Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
						Total.	In Solution.	In Suspension.							
Intake—															
1900.....	.31	4.20	1.40	2.80	.0016	.0163	.0141	.0022	.29	.009	.0000	.35	1.35	1.00	915
1901.....	.31	4.25	1.45	2.80	.0013	.0169	.0159	.0010	.32	.008	.0000	.38	1.40	1.00	1135
1902.....	.22	3.95	1.25	2.70	.0021	.0178	.0164	.0014	.32	.010	.0000	.33	1.35	.90	496
1903.....	.30	4.25	1.20	3.05	.0030	.0142	.0129	.0013	.32	.010	.0000	.36	1.45	1.00	783
Tap in Boiler Room—															
1900.....	.31	4.10	1.30	2.80	.0012	.0130	.0121	.0009	.29	.009	.0000	.33	1.35	1.00	815
1901.....	.31	4.15	1.35	2.80	.0008	.0139	.0136	.0003	.32	.009	.0000	.36	1.40	.95	3547
1902.....	.22	3.80	1.20	2.60	.0016	.0126	.0120	.0006	.32	.011	.0000	.30	1.35	.90	526
1903.....	.29	4.15	1.15	3.00	.0030	.0125	.0120	.0005	.31	.010	.0000	.33	1.45	1.00	1297

## Bristol and Warren Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Towns of Bristol and Warren, the Sample being taken from the Kickemuit River, at the Pumping Station of the Bristol and Warren Water Works.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrates.
								Total.	In Solution.	In Suspension.							
Jan. 5.....	v. sl.	sl.	.80	6.15	2.20	3.95	.0024	.0266	.0240	.0026	.68	.014	.0000	1.06	1.95	.47	Liq.
Feb. 2.....	sl.	dist.	.70	6.50	2.30	4.20	.0040	.0280	.0246	.0034	.68	.013	.0000	.98	1.82	.41	9486
Mar. 2.....	dist.	sl.	.71	4.15	1.35	2.80	.0018	.0258	.0236	.0022	.38	.007	.0000	.92	.95	.38	427
April 1.....	sl.	dec.	1.06	5.95	2.15	3.80	.0032	.0292	.0266	.0026	.51	.005	.0000	1.12	1.43	.59	4650
May 4.....	dist.	sl.	.92	5.80	2.45	3.35	.0032	.0298	.0282	.0016	.70	.004	.0000	1.06	1.69	.69	1798
June 1.....	dec.	dec.	1.00	7.00	2.25	4.75	.0042	.0382	.0314	.0068	.95	.012	.0002	1.10	2.21	1.10	3968
July 6.....	sl.	dec.	1.40	6.75	3.20	3.55	.0030	.0382	.0348	.0034	.71	.009	.0001	1.53	1.69	.95	4821
Aug. 3.....	dec.	dec.	.90	7.80	2.75	5.05	.0024	.0378	.0354	.0024	1.40	.004	.0000	1.17	1.95	1.15	262
Sept. 8.....	sl.	dist.	.62	7.40	3.35	4.05	.0042	.0334	.0306	.0028	1.20	.005	.0002	.97	2.34	1.25	.....
Oct. 5.....	dist.	dist.	.58	8.55	2.45	6.10	.0064	.0402	.0382	.0020	1.65	.001	.0001	.99	2.21	1.50	4712
Nov. 2.....	sl.	sl.	.80	9.70	2.75	6.95	.0098	.0414	.0374	.0040	2.18	.004	.0000	1.11	2.21	1.30	1592
Nov. 30.....	sl.	dec.	.76	8.15	2.55	5.60	.0082	.0406	.0372	.0034	1.45	.010	.0002	1.06	2.15	1.25	2232
Yearly avg...	dist.	dist.	.85	7.00	2.50	4.50	.0044	.0341	.0310	.0031	1.04	.007	.0001	1.09	1.90	.90	3395

*Chemical and Bacteriological Examination of the Water Supply of the Towns of Bristol and Warren, the Sample being taken from the Tap in the Office of the Town Clerk of Bristol.*

Jan. 5.....	v. sl.	sl.	.75	6.85	2.00	4.85	.0024	.0266	.0240	.0026	.74	.018	.0000	1.04	2.15	.65	7006
Feb. 2.....	sl.	dist.	.71	7.05	2.25	4.80	.0044	.0240	.0230	.0010	.69	.020	.0000	.92	1.82	.60	1612
Mar. 2.....	dist.	sl.	.70	5.05	1.80	3.25	.0034	.0256	.0212	.0044	.42	.008	.0000	.86	1.27	.50	4541
April 1.....	sl.	dec.	1.02	5.65	1.40	4.25	.0032	.0314	.0216	.0098	.54	.007	.0000	1.08	1.76	.60	.....
May 4.....	dist.	sl.	.90	5.90	2.20	3.70	.0042	.0314	.0280	.0034	.71	.004	.0000	1.03	1.69	.83	1209
June 1.....	dec.	dec.	1.00	7.25	2.70	4.55	.0040	.0372	.0314	.0058	.97	.010	.0001	1.10	2.34	1.20	.....
July 6.....	sl.	dec.	1.40	7.15	3.55	3.60	.0034	.0410	.0370	.0040	.72	.014	.0001	1.68	1.69	1.10	279
Aug. 3.....	dec.	dec.	.90	8.15	2.95	5.20	.0024	.0386	.0332	.0054	1.40	.007	.0000	1.17	2.21	1.30	5
Sept. 9.....	sl.	dec.	.63	10.80	4.70	6.10	.0040	.0640	.0296	.0344	1.23	.007	.0003	1.30	2.47	1.30	7192
Oct. 5.....	sl.	dec.	.61	9.35	2.75	6.60	.0034	.0432	.0364	.0068	1.63	.009	.0001	1.00	2.34	1.60	3908
Nov. 2.....	sl.	sl.	.76	9.75	2.75	7.00	.0044	.0394	.0348	.0046	2.19	.011	.0000	1.03	2.60	1.35	1642
Nov. 30.....	sl.	dec.	.74	8.15	2.60	5.55	.0064	.0374	.0332	.0042	1.45	.021	.0002	1.00	2.34	1.30	2480
Yearly avg...	sl.	dec.	.84	7.60	2.65	4.95	.0038	.0367	.0295	.0072	1.06	.011	.0001	1.10	2.05	1.05	2987



## Bristol and Warren Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Towns of Bristol and Warren, giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON EVAPORA- TION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
		Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
						Total.	In Solution.	In Suspension.							
Pumping Station—															
1900 . . . . .	.99	11.25	4.00	7.25	.0035	.0439	.0356	.0083	3.00	.007	.0000	1.16	2.30	1.05	1764
1901 . . . . .	.81	9.30	3.15	6.15	.0029	.0358	.0323	.0035	2.04	.007	.0000	1.11	2.20	.85	2273
1902 . . . . .	.74	10.75	3.60	7.15	.0029	.0349	.0322	.0027	2.82	.008	.0000	1.02	2.30	.85	12052
1903 . . . . .	.85	7.00	2.50	4.50	.0044	.0341	.0310	.0031	1.04	.007	.0001	1.09	1.90	.90	3395
Town Clerk's Office—															
1900* . . . . .	.96	24.75	5.10	19.65	.0016	.0376	.0325	.0051	9.54	.011	.0000	1.07	3.75	1.15	13014
1901 . . . . .	.79	9.40	3.05	6.35	.0012	.0341	.0304	.0037	2.03	.008	.0000	1.06	2.35	.95	4528
1902 . . . . .	.74	11.20	3.40	7.80	.0021	.0352	.0309	.0043	2.90	.010	.0000	1.01	2.40	.95	9798
1903 . . . . .	.84	7.60	2.65	4.95	.0038	.0367	.0295	.0072	1.06	.011	.0001	1.10	2.05	1.05	2987

\* One sample was very high in "salt water."



## Narragansett Pier Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the District of Narragansett,  
the Sample being taken from Rocky Brook, at the Pumping Station.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				Chlorine.	NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.				As Nitrates.	As Nitrites.				
								Total.	In Solution.	In Suspension.							
Jan. 26.....	v. sl.	v. sl.	.80	4.70	1.40	3.30	.0046	.0214	.0182	.0032	.56	.015	.0000	.84	.79	.36	Liq.
Feb. 24.....	v. sl.	sl.	.60	4.40	1.70	2.70	.0016	.0134	.0124	.0010	.53	.006	.0000	.62	.79	.33	4526
Mar. 31.....	v. sl.	v. sl.	.92	3.85	1.70	2.15	.0018	.0184	.0178	.0006	.44	.014	.0001	.99	.63	.31	1948
April 26.....	sl.	v. sl.	.65	3.85	1.40	2.45	.0026	.0130	.0122	.0008	.50	.006	.0001	.69	.63	.40	151
May 27.....	sl.	v. sl.	.70	4.40	1.20	3.20	.0042	.0192	.0168	.0024	.55	.003	.0001	.68	.79	.51	286
June 22.....	sl.	v. sl.	1.38	5.20	2.50	2.70	.0060	.0278	.0244	.0034	.55	.005	tr.	1.18	.63	.49	4836
July 27.....	sl.	sl.	.98	5.90	2.15	3.75	.0034	.0284	.0268	.0016	.66	.009	.0000	.88	.79	.70	505
Aug. 11.....	dist.	sl.	1.04	5.60	2.25	3.35	.0034	.0244	.0226	.0018	.60	.008	.0000	1.08	.95	.50	Lost.
Sept. 28.....	sl.	sl.	.78	4.55	1.80	2.75	.0012	.0218	.0176	.0042	.65	.002	.0000	.64	.79	.60	2604
Oct. 29.....	sl.	sl.	.74	4.70	1.70	3.00	.0010	.0158	.0158	.0000	.68	.006	.0000	.74	.79	.49	2
Nov. 28.....	sl.	sl.	.70	5.25	1.45	3.80	.0030	.0174	.0162	.0012	.75	.015	.0000	.74	1.11	.48	3657
Dec. 29.....	dist.	sl.	.70	4.80	1.15	3.65	.0030	.0174	.0166	.0008	.73	.020	.0000	.78	1.11	.51	357
Yearly avg...	sl.	sl.	.83	4.75	1.70	3.05	.0030	.0199	.0181	.0018	.60	.009	.0000	.82	.80	.45	1887

## Narragansett Pier Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the District of Narragansett,  
the Sample being taken from the Tap in the Office of the Water Company.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			As Nitrates.	As Nitrites.					
								Total.	In Solution.	In Suspension.							
Jan. 26.....	v. sl.	v. sl.	.75	4.75	1.45	3.30	.0022	.0180	.0172	.0008	.56	.010	.0000	.78	.95	.39	449
Feb. 24.....	v. sl.	0	.57	4.50	1.80	2.70	.0010	.0122	.0112	.0010	.53	.011	.0000	.57	.79	.35	220
Mar. 30.....	v. sl.	v. sl.	.90	4.05	1.35	2.70	.0008	.0164	.0156	.0008	.44	.010	.0000	.83	.63	.31	*
April 26.....	v. sl.	tr.	.60	3.70	1.30	2.40	.0008	.0114	.0110	.0004	.51	.005	.0000	.62	.63	.42	*
May 27.....	sl.	sl.	.70	4.40	1.20	3.20	.0014	.0188	.0164	.0024	.50	.005	.0000	.71	.79	.51	203
June 22.....	sl.	sl.	1.30	5.20	2.15	3.05	.0020	.0270	.0228	.0042	.55	.005	.0000	1.10	.63	.49	369
July 27.....	sl.	sl.	.90	5.55	2.10	3.45	.0008	.0260	.0216	.0044	.63	.009	.0000	.82	.79	.70	*
Aug. 11.....	dist.	sl.	1.00	5.60	2.15	3.45	.0020	.0230	.0206	.0024	.63	.008	.0000	1.06	.95	.50	Lost.
Sept. 28.....	sl.	sl.	.71	4.95	2.05	2.90	.0010	.0188	.0154	.0034	.66	.004	.0000	.60	.79	.70	265
Oct. 29.....	sl.	sl.	.74	5.05	1.60	3.45	.0028	.0196	.0172	.0024	.71	.006	.0000	.74	.79	.49	179
Nov. 28.....	sl.	sl.	.70	5.20	1.25	3.95	.0010	.0168	.0162	.0006	.73	.018	.0000	.67	1.29	.51	9176
Dec. 29.....	dist.	dist.	.68	5.45	1.60	3.85	.0014	.0168	.0166	.0002	.73	.025	.0000	.72	1.19	.59	113
Yearly avg...	sl.	sl.	.80	4.85	1.65	3.20	.0014	.0187	.0168	.0019	.60	.010	.0000	.77	.85	.50	1372

*Chemical and Bacteriological Examination of a Water Supply in the District of Narragansett,  
taken from a Supply known as the Gladstone Spring, the same being Located at Narra-  
gansett Pier.*

July 29.....	0	0	.00	7.65	1.90	5.75	.0002	.0014	.....	.....	1.24	.162	.0000	.00	2.08	1.11	122
Aug. 11.....	0	0	.00	7.30	1.15	6.15	.0002	.0010	.....	.....	1.24	.171	.0000	.00	2.08	1.15	Lost.
Sept. 28.....	0	0	.00	6.85	1.55	5.30	.0002	.0006	.....	.....	1.24	.114	.0000	.00	2.08	1.10	130
Yearly avg...	0	0	.00	7.25	1.55	5.70	.0002	.0010	.....	.....	1.24	.149	.0000	.00	2.10	1.10	126

\*Stood 3 days.

## Narragansett Pier Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the District of Narragansett.  
Giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of  
the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON EVAPO- RATION.			AMMONIA.						NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.
		Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.					
						Total.	In Solution.	In Suspension.								
Narragansett Pier,																
Pumping Station—																
1900.....	.92	5.10	2.00	3.10	.0022	.0256	.0205	.0051	.60	.006	.0000	.88	.80	.70	1536	
1901.....	.85	5.35	2.25	3.10	.0022	.0257	.0223	.0034	.57	.006	.0000	.94	.90	.50	1017	
1902.....	.75	4.90	1.70	3.20	.0029	.0210	.0191	.0019	.59	.010	.0000	.76	.80	.45	1722	
1903.....	.83	4.75	1.70	3.05	.0030	.0199	.0181	.0018	.60	.009	.0000	.82	.80	.45	1887	
Narragansett Pier,																
Office Water Co.—																
1900.....	.87	5.00	1.90	3.10	.0007	.0196	.0166	.0030	.60	.007	.0000	.77	.85	.70	1652	
1901.....	.88	5.40	2.20	3.20	.0005	.0205	.0188	.0017	.59	.007	.0000	.87	1.15	.70	1505	
1902.....	.76	4.90	1.80	3.10	.0011	.0157	.0174	.0013	.61	.012	.0000	.73	.85	.45	646	
1903.....	.80	4.85	1.65	3.20	.0014	.0157	.0168	.0019	.60	.010	.0000	.77	.85	.50	1372	
Narragansett Pier.																
Gladstone Spring—																
1901.....	.00	6.85	1.35	5.50	.0000	.0012	.....	.....	1.02	.086	.0000	.00	1.95	1.25	.....	
1902.....	.00	7.10	1.50	5.60	.0003	.0015	.....	.....	1.21	.093	.0000	.02	2.20	.95	94	
1903.....	.00	7.25	1.55	5.70	.0002	.0010	.....	.....	1.24	.149	.0000	.00	2.10	1.10	126	

## Newport Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Newport, the Sample being taken from the South Reservoir at the Intake.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 12.....	sl.	dec.	.40	8.25	2.80	5.45	.0676	.0512	.0460	.0052	1.75	.060	.0006	.64	2.54	1.80	1178
Feb. 9.....	dec.	sl.	.29	8.60	2.50	6.10	.0306	.0444	.0354	.0090	1.38	.067	.0006	.57	2.47	1.45	811
Mar. 9.....	dec.	sl.	.30	7.35	2.45	4.90	.0136	.0440	.0294	.0146	1.40	.094	.0006	.52	2.29	1.30	142
April 13.....	sl.	dist.	.30	7.35	2.20	5.15	.0052	.0476	.0318	.0158	1.20	.050	.0006	.59	2.60	1.49	6448
May 11.....	sl.	sl.	.35	7.80	2.30	5.50	.0100	.0562	.0414	.0148	1.30	.025	.0012	.62	2.60	1.70	2418
June 8.....	v. sl.	sl.	.30	7.55	2.05	5.50	.0016	.0430	.0374	.0056	1.30	.005	.0002	.59	3.25	1.80	1068
July 6.....	v. sl.	v. sl.	.22	7.50	2.55	4.95	.0046	.0426	.0356	.0070	1.35	.006	.0001	.52	2.73	1.70	2381
Aug. 10....	{	green algæ	.44	11.05	4.90	6.15	.0012	.0610	.0346	.0264	1.30	.005	.0000	.96	2.73	2.06	Lost
		heavy															
Sept. 14.....	dec.	dec.	.35	11.80	4.10	7.70	.0032	.0630	.0358	.0272	1.45	.004	.0000	1.14	3.12	2.30	1364
Oct. 12.....	dec.	dec.	.20	10.75	3.30	7.45	.0032	.0936	.0426	.0510	1.85	.006	.0002	.82	2.86	1.79	1674
Nov. 9.....	dec.	dist.	.24	8.85	2.70	6.15	.0070	.0516	.0394	.0122	1.95	.003	.0001	.55	2.73	1.95	119
Dec. 7.....	dist.	sl.	.20	9.55	2.80	6.75	.0274	.0458	.0380	.0078	1.25	.024	.0000	.60	3.25	2.20	138
Yearly avg...	dec.	dist.	.30	8.85	2.90	5.95	.0146	.0537	.0373	.0164	1.46	.029	.0004	.68	2.75	1.80	1613

*Chemical and Bacteriological Examination of the Water Supply of the City of Newport, the Sample being taken from the Tap in the Cottage of the Engineer of the Newport Water Works.*

Jan. 12.....	sl.	sl.	.35	8.45	2.40	6.05	.0664	.0338	.0320	.0018	1.90	.076	.0004	.48	2.86	1.80	633
Feb. 9.....	sl.	sl.	.26	9.15	2.55	6.60	.0298	.0346	.0316	.0030	1.78	.086	.0006	.48	2.60	1.60	993
Mar. 9.....	sl.	sl.	.25	8.40	2.45	5.95	.0108	.0318	.0270	.0048	1.75	.107	.0010	.44	2.73	1.50	273
April 13.....	v. sl.	red'ish sl.	.22	9.90	2.75	7.15	.0182	.0314	.0260	.0054	2.15	.085	.0006	.43	3.25	2.00	367
May 11.....	sl.	dec.	.31	11.65	2.85	8.80	.0444	.0390	.0314	.0076	2.40	.057	.0008	.46	3.64	2.51	18600
June 8.....	v. sl.	Iron dist.	.30	9.90	2.15	7.75	.0140	.0330	.0270	.0060	2.00	.027	.0004	.52	3.90	2.75	3720
July 6.....	v. sl.	v. sl.	.30	8.20	2.70	5.50	.0096	.0298	.0264	.0034	1.65	.029	.0002	.41	3.12	2.31	2257
Aug. 10.....	dec.	green algæ	.42	11.35	3.75	7.60	.0214	.0478	.0370	.0108	1.75	.025	.0004	.78	3.77	2.60	Lost
Sept. 14.....	dec.	sl.	.25	10.35	3.05	7.30	.0028	.0406	.0322	.0084	1.85	.014	.0000	.63	3.51	2.40	1275
Oct. 12.....	dec.	dist.	.20	9.70	2.40	7.30	.0078	.0510	.0370	.0140	2.30	.015	.0003	.49	3.12	2.20	3286
Nov. 9.....	sl.	sl.	.16	8.80	2.85	5.95	.0036	.0390	.0358	.0032	2.00	.011	.0000	.52	2.86	2.00	163
Dec. 7.....	sl.	sl.	.15	10.10	2.70	7.40	.0242	.0438	.0352	.0086	1.90	.036	.0000	.55	3.64	2.25	174
Yearly avg...	sl.	sl.	.26	9.65	2.70	6.95	.0211	.0379	.0315	.0064	1.95	.047	.0004	.52	3.25	2.15	2886

## Newport Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Newport, the Sample being taken from the Tap in the Office of the Board of Health of the City of Newport.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 12.....	sl.	sl.	.37	8.95	2.80	6.15	.0582	.0358	.0322	.0036	1.90	.069	.0006	.53	2.93	1.90	924
Feb. 9.....	sl.	sl.	.26	11.05	2.90	8.15	.0308	.0376	.0300	.0076	2.15	.101	.0006	.47	3.25	1.90	609
Mar. 9.....	sl.	sl.	.23	9.00	2.80	6.20	.0084	.0310	.0270	.0040	1.75	.110	.0006	.39	2.73	1.50	285
April 13.....	v. sl.	v. sl.	.20	8.65	3.00	5.65	.0024	.0260	.0232	.0028	1.65	.083	.0002	.43	2.99	1.80	2610
May 11.... }	sl.	iron dec.	.33	9.20	2.60	6.60	.0032	.0540	.0276	.0264	1.50	.062	.0004	.58	2.60	1.60	850
June 8.....	v. sl.	sl.	.29	11.05	2.65	8.40	.0022	.0334	.0266	.0068	2.35	.027	.0002	.52	4.16	2.40	64
July 6.....	sl.	dec.	.20	10.35	3.00	7.35	.0080	.0302	.0236	.0066	2.03	.063	.0007	.40	3.64	2.55	19220
Aug. 10.....	v. sl.	v. sl.	.24	9.95	2.65	7.30	.0032	.0288	.0260	.0028	1.80	.019	.0003	.45	3.84	2.90	Lost
Sept. 14.....	sl.	sl.	.26	12.30	3.55	8.75	.0054	.0390	.0290	.0100	2.05	.011	.0012	.56	3.90	3.10	2418
Oct. 12.....	dec.	dec.	.19	11.15	2.95	8.20	.0052	.0664	.0346	.0318	2.30	.020	.0003	.62	3.25	2.40	2480
Nov. 9.....	sl.	sl.	.20	9.55	3.20	6.35	.0030	.0414	.0392	.0022	2.08	.011	.0000	.49	2.86	2.00	389
Dec. 14.....	v. sl.	v. sl.	.20	9.15	2.80	6.35	.0126	.0428	.0366	.0062	*	.032	.0006	.65	3.35	2.35	228
Yearly avg...	sl.	sl.	.25	10.00	2.90	7.10	.0119	.0389	.0297	.0092	1.96	.051	.0005	.51	3.30	2.20	2734

\* Lost.



## Newport Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the City of Newport, giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
		Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.					
						Total.	In Solution.	In Suspension.								
Newport, Intake—																
1900.....	.39	9.50	3.15	6.35	.0056	.0560	.0372	.0188	1.80	.009	.0001	.66	2.00	2.10	1235	
1901.....	.30	9.10	3.35	5.75	.0230	.0540	.0405	.0135	1.57	.019	.0004	.65	2.70	1.90	1820	
1902.....	.26	8.55	2.95	5.60	.0045	.0525	.0387	.0138	1.58	.033	.0002	.64	2.60	1.75	1547	
1903.....	.30	8.85	2.90	5.95	.0146	.0537	.0373	.0164	1.46	.029	.0004	.68	2.75	1.80	1613	
Newport, Eng. Cottage—																
1900.....	.25	9.70	2.90	6.80	.0059	.0387	.0329	.0058	2.08	.012	.0001	.49	2.95	2.10	1755	
1901.....	.25	9.30	2.95	6.35	.0208	.0383	.0338	.0045	1.75	.027	.0001	.51	2.95	1.95	6162*	
1902.....	.24	9.00	2.75	6.25	.0102	.0406	.0344	.0062	1.79	.042	.0001	.56	2.80	1.80	1236	
1903.....	.26	9.65	2.70	6.95	.0211	.0379	.0315	.0064	1.95	.047	.0004	.52	3.25	2.15	2886	
Newport, Board of Health—																
1900.....	.23	10.55	3.45	7.10	.0055	.0489	.0413	.0076	2.02	.015	.0000	.58	2.95	2.05	563	
1901.....	.23	9.55	2.90	6.65	.0145	.0388	.0342	.0046	1.76	.029	.0002	.51	3.00	2.10	2428	
1902.....	.24	9.70	2.90	6.80	.0054	.0432	.0308	.0124	1.85	.052	.0002	.55	2.95	1.90	1554	
1903.....	.25	10.00	2.90	7.10	.0119	.0389	.0297	.0092	1.96	.051	.0005	.51	3.30	2.20	2734	

\* Includes one high bacteria count.



## Jamestown Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of Jamestown,  
the Sample being taken from the North Pumping Station.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 12.....	sl.	v. sl.	.65	6.80	2.60	4.20	.0040	.0226	.0222	.0004	1.12	.040	.0000	.87	1.90	.55	20716
Feb. 9.....	v. sl.	v. sl.	.36	6.10	2.35	3.75	.0036	.0204	.0202	.0002	.90	.046	.0000	.52	1.19	.59	2914
March 9.....	v. sl.	v. sl.	.56	5.60	1.70	3.90	.0038	.0276	.0252	.0024	.86	.028	.0000	.79	1.50	.59	6448
April 15.....	v. sl.	v. sl.	.40	4.60	1.40	3.20	.0014	.0160	.0156	.0004	.68	.045	.0000	.52	1.43	.70	3596
May 10.....	v. sl.	sl.	.40	5.15	1.45	3.70	.0022	.0190	.0180	.0010	.80	.037	.0000	.51	1.43	1.01	2480
June 8.....	v. sl.	v. sl.	.58	7.05	2.10	4.95	.0058	.0260	.0254	.0006	1.14	.065	.0002	.71	1.95	1.38	3272
July 13.....	sl.	sl.	1.48	7.85	3.00	4.85	.0070	.0504	.0462	.0042	.92	.015	.0004	1.48	1.82	1.30	2418
Aug. 3.....	dist.	dec.	1.36	7.90	3.15	4.75	.0044	.0646	.0534	.0112	1.08	.010	.0000	1.24	1.82	1.29	3264
Sept. 14.....	sl.	dist.	1.00	8.00	3.25	4.75	.0110	.0568	.0426	.0142	1.12	.021	.0002	1.11	1.69	1.15	.....
Oct. 13.....	sl.	sl.	1.30	8.30	3.55	4.75	.0062	.0598	.0526	.0072	1.34	.062	.0002	1.35	1.95	.92	1850
Nov. 10.....	sl.	sl.	.78	6.85	2.80	4.05	.0062	.0608	.0498	.0110	1.14	.015	.0000	1.06	1.56	1.00	1946
Dec. 6.....	dist.	sl.	.86	9.95	2.85	7.10	.0272	.0484	.0420	.0064	1.76	.052	.0006	1.16	2.73	1.10	4278
Yearly avg...	sl.	sl.	.81	7.00	2.50	4.50	.0069	.0394	.0344	.0050	1.07	.036	.0001	.94	1.75	.95	4835

*Chemical and Bacteriological Examination of the Water Supply of the Town of Jamestown  
the Sample being taken from the South Pumping Station.*

Jan. 12.....	0	v. sl.	.00	15.55	4.05	11.50	.0006	.0108	.0108	.0000	3.50	.440	.0000	.05	4.57	1.20	1612
Feb. 9.....	0	0	.00	15.20	4.45	10.75	.0006	.0034	.0034	.0000	3.55	.370	.0000	.03	4.16	1.10	557
Mar. 9.....	0	0	.04	14.50	4.90	9.60	.0008	.0040	.0040	.0000	3.33	.440	.0000	.07	4.57	1.31	....
April 15.....	0	0	.05	13.00	3.40	9.60	.0026	.0054	.0054	.0000	2.88	.370	.0002	.08	3.77	1.30	....
May 11.....	0	v. sl.	.00	12.05	3.35	8.70	.0012	.0058	.0058	.0000	2.40	.440	.0001	.06	3.90	1.19	....
June 8.....	0	tr	.08	12.45	3.65	8.80	.0022	.0080	.0080	.0000	2.35	.350	.0004	.23	3.90	1.40	....
July 13.....	sl.	dec.	.45	11.60	3.55	8.05	.0074	.0274	.0202	.0072	1.90	.110	.0010	.77	4.50	3.10	156
Aug. 3.....	0	sl.	.10	14.15	4.15	10.00	.0016	.0114	.0114	.0000	2.55	.326	.0001	.22	4.43	2.26	....
Sept. 14.....	0	sl.	.05	18.05	5.90	12.15	.0024	.0164	.0164	.0000	3.95	.396	.0003	.66	5.43	2.15	....
Oct. 13.....	0	0	.00	15.80	3.55	12.25	.0000	.0022	.0022	.0000	4.30	.492	.0006	.09	5.21	1.50	....
Nov. 10.....	0	sl.	.00	14.65	3.80	10.85	.0000	.0022	.0022	.0000	3.90	.440	.0000	.05	5.14	1.40	25
Dec. 6.....	0	0	.00	15.05	1.90	13.15	.0006	.0024	.0024	.0000	3.93	.460	.0000	.05	5.14	1.60	4216
Yearly avg...	0	v. sl.	.06	14.35	3.90	10.45	.0017	.0083	.0077	.0006	3.21	.386	.0002	.20	4.55	1.65	*

\* Bact. average questionable—many counts too high, (contaminated in collection?)

## Jamestown Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of Jamestown, the Sample being taken from the Tap in the store of J. Watson, Located on the Distal End of the Supply Pipes.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 12.....	sl.	sl.	.65	7.45	2.90	4.55	.0018	.0218	.0216	.0002	1.39	.037	.0000	.81	2.34	1.00	752
Feb. 13.....	sl.	v. sl.	.40	6.40	1.90	4.50	.0016	.0182	.0174	.0008	.98	.067	.0000	.46	1.95	1.15	.....
March 10....	v. sl.	v. sl.	.50	6.30	1.55	4.75	.0018	.0228	.0186	.0042	.90	.041	.0000	.66	1.95	1.20	247
April 15.....	v. sl.	v. sl.	.40	5.55	1.90	3.65	.0012	.0176	.0154	.0022	.80	.055	.0000	.56	2.08	1.41	3072
May 11.....	v. sl.	v. sl.	.46	6.40	2.05	4.35	.0016	.0218	.0204	.0014	.92	.042	.0000	.62	2.21	1.60	68
June 8.....	v. sl.	sl.	.58	7.10	2.55	4.55	.0016	.0274	.0246	.0028	1.10	.036	.0000	.67	2.34	1.50	4526
July 13.....	sl.	sl.	1.52	8.55	3.35	5.20	.0082	.0484	.0444	.0040	.92	.015	.0006	1.50	2.47	1.80	8060
Aug. 3.....	dist.	dec.	1.32	8.65	3.25	5.40	.0020	.0574	.0460	.0114	1.08	.015	.0000	1.16	2.47	1.90	2076
Sept. 14.....	sl.	dist.	1.00	8.90	3.65	5.25	.0036	.0528	.0462	.0066	1.18	.021	.0014	.98	2.34	1.90	.....
Oct. 13.....	sl.	sl.	1.30	8.30	3.15	5.15	.0022	.0582	.0490	.0092	1.36	.062	.0000	1.34	2.08	1.35	5100
Nov. 10.....	sl.	sl.	.76	7.30	2.55	4.75	.0032	.0564	.0482	.0082	1.16	.019	.0000	1.00	2.03	1.00	54
Dec. 6.....	dist.	sl.	.85	10.65	2.90	7.75	.0130	.0448	.0422	.0026	1.80	.044	.0002	1.14	2.99	1.45	.....
Yearly avg...	sl.	sl.	.81	7.65	2.65	5.00	.0035	.0373	.0328	.0045	1.13	.038	.0002	.91	2.25	1.45	2662

## Jamestown Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of Jamestown,  
Giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of  
the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	RESIDUE ON EVAPO- RATION.				AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
						Total.	In Solution.	In Suspension.							
Jamestown,  No. Pump'g Sta'n—															
1900.....	.63	9.65	3.10	6.55	.0035	.0336	.0269	.0067	1.27	.071	.0001	.77	2.25	1.05	4794
1901.....	.86	8.25	3.45	4.80	.0035	.0441	.0409	.0032	1.32	.020	.0000	1.16	1.90	.90	2176
1902.....	.65	7.70	2.95	4.75	.0037	.0379	.0337	.0042	1.16	.046	.0001	.88	1.90	1.00	4131
1903.....	.81	7.00	2.50	4.50	.0069	.0394	.0344	.0050	1.07	.036	.0001	.94	1.75	.95	4835
Jamestown,  So. Pump'g Sta'n—															
1900.....	.03	10.25	2.95	7.30	.0001	.0030	.0029	.0001	2.02	.243	.0000	.05	3.50	1.50	842
1901.....	.08	12.40	4.10	8.30	.0006	.0067	.0063	.0004	2.29	.335	.0001	.14	4.00	1.30	925
1902.....	.02	13.40	3.80	9.60	.0007	.0034	.0034	.0000	2.95	.396	.0000	.08	4.30	1.25	6578
1903.....	.06	14.35	3.90	10.45	.0017	.0083	.0077	.0006	3.21	.386	.0002	.20	4.55	1.65	*
Jamestown,  Watson's Store—															
1900.....	.44	10.35	2.90	7.45	.0010	.0202	.0194	.0008	1.60	.105	.0000	.52	3.40	2.10	723
1901.....	.45	10.35	3.60	6.75	.0014	.0226	.0210	.0016	1.75	.177	.0001	.60	3.30	1.75	11016
1902.....	.52	9.80	3.25	6.55	.0015	.0303	.0263	.0040	1.57	.143	.0000	.70	2.75	1.50	1451
1903.....	.81	7.65	2.65	5.00	.0035	.0373	.0328	.0045	1.13	.038	.0002	.91	2.25	1.45	2662

\* Questionable.

## Westerly Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of Westerly, the Sample being taken from the Pumping Station of the Westerly Water Works.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.			NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Jan. 5.....	0	0	.00	5.10	0.40	4.70	.0004	.0016	.....	.....	.56	.052	.0000	.00	1.89	1.60	1
Feb. 2.....	0	0	.00	5.15	0.80	4.35	.0000	.0018	.....	.....	.54	.042	.0000	.00	1.76	1.60	.....
Mar. 2.....	0	0	.00	4.65	0.85	3.80	.0000	.0008	.....	.....	.53	.040	.0000	.00	1.82	1.70	1
April 1.....	0	0	.00	4.75	0.80	3.95	.0000	.0006	.....	.....	.52	.052	.0000	.00	1.82	1.55	16
May 15.....	0	0	.00	5.05	1.20	3.85	.0000	.0012	.....	.....	.52	.052	.0000	.00	1.95	1.65	11
June 1.....	0	0	.00	5.00	0.80	4.20	.0002	.0010	.....	.....	.52	.036	.0000	.01	2.08	1.60	.....
July 1.....	0	0	.00	5.20	0.90	4.30	.0002	.0024	.....	.....	.51	.042	.0000	.00	1.82	1.70	.....
Aug. 3.....	0	0	.00	4.90	0.70	4.20	.0000	.0010	.....	.....	.52	.052	.0000	.00	1.95	1.60	212
Sept. 8.....	0	0	.00	5.05	1.05	4.00	.0002	.0012	.....	.....	.54	.052	.0000	.00	1.95	1.80	6
Oct. 5.....	0	0	.00	5.05	.65	4.40	.0000	.0010	.....	.....	.52	.050	.0000	.00	2.08	1.60	33
Nov. 2.....	0	0	.00	5.10	.90	4.20	.0002	.0018	.....	.....	.54	.050	.0000	.00	2.08	1.60	87
Nov. 30.....	0	0	.00	5.00	.45	4.55	.0000	.0012	.....	.....	.53	.063	.0000	.01	2.21	1.65	0
Yearly avg...	0	0	.00	5.00	.80	4.20	.0001	.0013	.....	.....	.53	.049	.0000	.00	1.95	1.65	41

*Chemical and Bacteriological Examination of the Water Supply of the Town of Westerly, the Sample being taken from the Tap at the Drinking Fountain at the Railroad Station.*

Jan. 5.....	0	0	.00	5.10	1.10	4.00	.0000	.0016	.....	.....	.56	.052	.0000	.00	1.89	1.60	22
Feb. 2.....	0	0	.00	5.15	.85	4.30	.0004	.0026	.....	.....	.54	.042	.0000	.00	1.76	1.55	.....
Mar. 2.....	0	0	.00	4.55	1.20	3.35	.0000	.0005	.....	.....	.53	.040	.0000	.00	1.82	1.70	28
April 1.....	0	0	.00	4.75	0.80	3.95	.0000	.0008	.....	.....	.52	.052	.0000	.00	1.82	1.55	10
May 15.....	0	0	.00	5.05	1.05	4.00	.0000	.0016	.....	.....	.52	.052	.0000	.00	1.95	1.65	9
June 1.....	0	0	.00	5.00	0.80	4.20	.0001	.0022	.....	.....	.52	.036	.0000	.01	2.08	1.60	11
July 1.....	0	0	.00	5.45	0.75	4.70	.0002	.0018	.....	.....	.52	.046	.0000	.00	1.89	1.65	.....
Aug. 3.....	0	0	.00	5.00	.60	4.40	.0000	.0010	.....	.....	.51	.050	.0000	.00	1.95	1.60	0
Sept. 8.....	0	0	.00	5.05	1.00	4.05	.0002	.0012	.....	.....	.54	.052	.0000	.00	2.08	1.80	9
Oct. 5.....	0	0	.00	5.15	.80	4.35	.0000	.0008	.....	.....	.54	.050	.0000	.01	1.95	1.60	6
Nov. 2.....	0	0	.00	5.35	.80	4.55	.0000	.0014	.....	.....	.54	.050	.0000	.00	2.21	1.60	0
Nov. 30.....	0	0	.00	4.85	.45	4.40	.0000	.0024	.....	.....	.53	.063	.0000	.01	1.95	1.65	0
Yearly Avg..	0	0	.00	5.05	.85	4.20	.0001	.0015	.....	.....	.53	.049	.0000	.00	1.95	1.65	10

## Westerly Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of Westerly,  
Giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of  
the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON ENVAPO- RATION .			AMMONIA.			NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.		
		Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			As Nitrates.					As Nitrites.	
						Total.	In Solution.	In Suspension.							
Westerly,  Pumping Station—															
1900.....	0	5.30	1.25	4.05	.0000	.0016			.59	.056	.0000	.01	1.80	1.50	1130
1901.....	0	5.40	1.25	4.15	.0001	.0016			.58	.059	.0000	.01	2.00	1.55	96
1902.....	0	5.20	.90	4.30	.0002	.0015			.57	.050	.0000	.00	1.95	1.50	33
1903.....	0	5.00	.80	4.20	.0001	.0013			.53	.049	.0000	.00	1.95	1.65	41
Westerly,  Drinking Fountain—															
1900.....	0	5.35	1.25	4.10	.0000	.0014			.59	.056	.0000	.00	1.80	1.45	340
1901.....	0	5.45	1.25	4.20	.0001	.0015			.58	.059	.0000	.02	2.00	1.55	520
1902.....	0	5.10	.95	4.15	.0001	.0015			.57	.049	.0000	.00	1.95	1.50	58
1903.....	0	5.05	.85	4.20	.0001	.0015			.53	.049	.0000	.00	1.95	1.65	10



## East Providence Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of East Providence,  
the Sample being taken from the Ten-Mile River, at the Pumping Station at Hunt's Mills.*

(Parts in 100,000.)

DATE OF COLLECTION.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.				
								Total.	In Solution.	In Suspension.							
Jan. 2.....	sl.	dist.	.55	5.90	1.75	4.15	.0062	.0192	.0180	.0012	.62	.026	.0010	.72	2.15	.29	1751
Feb. 3.....	dec.	sl.	.56	5.85	1.90	3.95	.0114	.0180	.0170	.0010	.47	.031	.0006	.64	1.43	.62	1655
Mar. 3.....	sl.	v. sl.	.55	4.85	1.60	3.25	.0024	.0162	.0162	.0000	.27	.020	.0002	.58	1.27	.51	128
April 1.....	sl.	v. sl.	.70	4.95	1.70	3.25	.0014	.0200	.0192	.0008	.36	.018	.0002	.77	1.43	.70	896
May. 5.....	sl.	sl.	.65	6.10	1.90	4.20	.0030	.0226	.0196	.0030	.56	.018	.0002	.59	2.08	1.00	3763
June 8.....	v. sl.	sl.	.36	6.60	1.15	5.45	.0058	.0180	.0176	.0004	.65	.021	.0002	.41	2.86	1.50	533
July 2.....	sl.	dec.	.72	7.35	2.10	5.25	.0022	.0320	.0256	.0064	.63	.020	.0002	.73	1.95	1.10	1208
Aug. 3.....	sl.	sl.	.50	6.15	1.80	4.35	.0038	.0206	.0202	.0004	.68	.030	.0002	.50	2.21	1.49	95
Sept. 4.....	v. sl.	sl.	.30	7.75	1.70	6.05	.0024	.0280	.0188	.0092	1.11	.026	.0008	.43	2.86	1.75	246
Oct. 1.....	dist.	sl.	.47	9.35	2.55	6.80	.0012	.0258	.0202	.0056	1.40	.021	.0008	.48	2.15	1.11	908
Nov. 4.....	sl.	sl.	.37	9.50	2.60	6.90	.0088	.0224	.0170	.0054	1.10	.035	.0008	.38	2.47	.80	2790
Dec. 3.....	dec.	sl.	.47	9.10	1.90	7.20	.0454	.0266	.0240	.0026	1.07	.128	.0020	.50	3.12	.81	44450
Yearly avg...	sl.	sl.	.52	6.95	1.90	5.05	.0078	.0225	.0195	.0030	.74	.033	.0006	.56	2.15	.95	4900

*Chemical and Bacteriological Examination of the Water Supply of the Town of East Providence,  
the Sample being the Effluent of the Mechanical Filter, at Hunt's Mills.*

Jan. 2.....	0	0		.11	6.00	1.05	4.95	.0056	.0074	.....	.....	.60	.025	.0014	.18	2.60	.20	8
Feb. 3.....	0	0		.05	5.95	.85	5.10	.0108	.0064	.....	.....	.49	.031	.0006	.12	1.50	.48	14
Mar. 3.....	0	0		.01	4.45	1.10	3.35	.0020	.0040	.....	.....	.32	.012	.0002	.08	1.27	.45	1
April 1.....	0	0		.04	4.60	0.85	3.75	.0012	.0070	.....	.....	.44	.018	.0002	.18	1.43	.51	30
May 5.....	0	0		.04	5.50	0.75	4.75	.0026	.0070	.....	.....	.58	.035	.0002	.14	2.08	.71	25
June 8.....	0	0		.00	6.45	0.90	5.55	.0046	.0058	.....	.....	.66	.020	.0002	.10	2.47	.70	1
July 2.....	0	0		.09	6.20	1.10	5.10	.0010	.0108	.....	.....	.63	.015	.0002	.23	1.95	.35	28
Aug. 3.....	0	0		.04	6.05	.90	5.15	.0032	.0064	.....	.....	.68	.016	.0002	.16	2.21	.75	3
Sept. 4.....	0	0		.01	7.55	1.45	6.10	.0020	.0078	.....	.....	1.10	.025	.0008	.10	3.25	.90	0
Oct. 1.....	0	0		.05	8.40	1.95	6.45	.0008	.0076	.....	.....	1.40	.020	.0006	.13	2.60	.40	1
Nov. 4.....	0	0		.01	9.70	2.55	7.15	.0082	.0086	.....	.....	1.00	.035	.0008	.13	3.06	.10	17
Dec. 3.....	0	0		.02	8.95	1.25	7.70	.0440	.0100	.....	.....	1.10	.131	.0020	.16	2.99	.41	1240
Yearly avg...	0	0		.04	6.65	1.20	5.45	.0072	.0074	.....	.....	.75	.032	.0006	.14	2.30	.50	115

\*Test for alum = negative.



## East Providence Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of East Providence,  
Giving the Average for the Years 1900-1903, Grouped for Comparison of the Quality of  
the Water at Different Points of the Supply.*

(Parts in 100,000.)

DATE OF COLLECTION.	RESIDUE ON EVAPO- RATION.				AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.					
						Total.	In Solution.	In Suspension.								
East Providence, Pumping Station—																
1900.....	.58	6.50	2.00	4.50	.0026	.0234	.0205	.0029	.69	.017	.0003	.58	1.85	1.10	730	
1901.....	.51	6.60	2.10	4.50	.0074	.0233	.0209	.0024	.76	.030	.0008	.58	2.10	.95	5280	
1902.....	.50	6.25	1.85	4.40	.0066	.0222	.0191	.0031	.67	.024	.0006	.65	1.90	.85	1925	
1903.....	.52	6.95	1.90	5.05	.0078	.0225	.0195	.0030	.74	.033	.0006	.56	2.15	.95	4900	
East Providence, Mechanical Filter—																
1900.....	.08	6.15	1.65	4.50	.0022	.0086	.....	.....	.66	.018	.0003	.18	2.10	.35	18	
1901.....	.05	6.50	1.50	5.00	.0067	.0084	.....	.....	.73	.026	.0008	.17	2.35	.20	34	
1902.....	.06	6.00	1.25	4.75	.0059	.0077	.....	.....	.64	.022	.0006	.19	2.20	.10	51	
1903.....	.04	6.65	1.20	5.45	.0072	.0074	.....	.....	.75	.032	.0006	.14	2.30	.50	115	

## New Shoreham Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of New Shoreham,  
Giving the Average for the Years 1900-1903.*

(Parts in 100,000.)

DATE OF COLLECTION.	Color.	RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
		Total.	Loss on Ignition.	Fixed	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
						Total.	In Solution.	In Suspension.							
New Shoreham, Sands' Pond—															
1900†.....	13.55	4.35	9.20	.0287	.0556	.0455	.0101	3.62	.016	*.0053	.96	2.40	1.25	2897	
1901.....	.24	10.00	2.40	7.60	.0026	.0282	.0222	.0060	3.08	.006	.0000	.35	2.15	.85	13206
1902.....	2.10	9.80	2.40	7.40	.0060	.0340	.0259	.0081	3.09	.018	.0000	.35	2.25	1.05	20028
1903.....	.19	8.35	1.60	6.75	.0016	.0191	.0172	.0019	2.66	.013	.0000	.15	2.10	1.15	2620

\* All determinations 0 except one.      ? One sample very poor in color—not in avg.

† One sample very high in all determinations.

## New Shoreham Water Supply.

*Chemical and Bacteriological Examination of the Water Supply of the Town of New Shoreham,  
the Sample being taken from Sands' Pond, at the Intake.*

(Parts, in 100,000.)

DATE OF COLLECTION.	APPEARANCE.		RESIDUE ON EVAFO- RATION.				AMMONIA.				NITRO- GEN.						
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.	Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.
Total.								In Solution.	In Suspension.								
Jan. 5.....	v. sl.	v. sl.	.20	8.60	1.60	7.00	.0022	.0162	.0162	.0000	2.90	.029	.0000	.03	2.34	1.30	4836
Feb. 2.....	v. sl.	0	.20	8.80	.80	8.00	.0040	.0190	.0188	.0002	2.80	.027	.0000	.19	2.47	1.30	187
Mar. 3.....	v. sl.	v. sl.	.17	8.65	1.40	7.25	.0034	.0194	.0182	.0012	2.65	.015	.0000	.19	2.21	1.40	.....
April 9.....	v. sl.	v. sl.	.15	7.65	1.70	5.95	.0004	.0182	.0166	.0016	2.50	.013	.0000	.18	2.34	1.32	.....
May 3.....	v. sl.	trace.	.12	8.20	1.75	6.45	.0006	.0152	.0146	.0006	2.50	.022	.0000	.11	2.60	1.40	.....
June 2.....	v. sl.	0.	.10	8.10	1.40	6.70	.0006	.0184	.0184	.0000	2.55	.009	.0000	.19	2.08	1.00	1240
July 6.....	sl.	sl.	*.60	7.65	1.80	5.85	.0018	.0170	.0140	.0030	2.50	.007	.0006	.14	1.56	.81	2517
Aug. 3.....	v. sl.	dec.	.10	9.15	2.30	6.85	.0008	.0232	.0186	.0046	2.55	.007	.0000	.20	1.50	.70	176
Sept. 7.....	v. sl.	sl.	.25	8.40	1.85	6.55	.0010	.0204	.0162	.0042	2.65	.011	.0000	.17	1.95	1.10	1401
Oct. 5.....	0	v. sl.	.11	8.45	1.75	6.70	.0016	.0238	.0198	.0040	2.75	.004	.0000	.14	1.95	1.20	2202
Nov. 2.....	v. sl.	v. sl.	.10	8.60	1.75	6.85	.0014	.0186	.0166	.0020	2.85	.014	.0000	.12	2.47	1.40	1105
Nov. 30.....	sl.	sl.	.12	8.10	1.00	7.10	.0012	.0202	.0188	.0014	2.70	.001	.0000	.12	1.82	1.05	9920
Yearly avg...	v. sl.	v. sl.	.19	8.35	1.60	6.75	.0016	.0191	.0172	.0019	2.66	.013	.0000	.15	2.10	1.15	2620

\* Iron.

*Averages of Results of Chemical and Bacteriological Examinations of all the Water Supplies in the State, January to December, inclusive, for the Year 1903.*

(Parts in 100,000.)

	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.		Oxygen Consumed. Hardness. Alkalinity.			Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free	Albuminoid.			Chlorine.	As Nitrates.					As Nitrates.
								Total.	In Solution.	In Suspension.							
Petta'n't (Prov.).	sl.	dist.	.46	5.00	1.70	3.30	.0018	.0220	.0185	.0035	.36	.011	.0002	.65	1.20	.60	3700
Washin'n (Prov.)	v. sl.	v. sl.	.47	3.55	1.30	2.25	.0020	.0164	.0150	.0014	.25	.004	.0000	.57	.55	.40	331
Hope (Prov.)....	v. sl.	v. sl.	.41	3.50	1.30	2.20	.0013	.0152	.0139	.0013	.24	.005	.0000	.53	.60	.45	538
Tap in Lab.(Pro.)	sl. to v. sl.	sl.	.40	4.45	1.35	3.10	.0014	.0157	.0139	.0018	.37	.011	.0001	.49	1.15	.65	565
P. V. Water Co..	v. sl.	v. sl.	.29	3.70	1.15	2.55	.0013	.0149	.0143	.0006	.32	.011	.0000	.35	1.20	.85	510
Knight's Spring..	0	0	.00	6.35	2.00	4.35	.0001	.0016	.....	.....	.72	.333	.0000	.01	2.15	.40	354
Coventry Water Co.....	0	0	.03	1.95	.55	1.40	.0005	.0075	.....	.....	.28	.002	.0000	.07	.35	.25	745
E. Greenwich....	v. sl.	v. sl.	.50	4.60	1.45	3.15	.0010	.0129	.0120	.0009	.40	.010	.0000	.58	1.30	.90	459
Woon. Res. 3....	* sl.	sl.	.50	3.35	1.45	1.90	.0024	.0294	.0223	.0071	.22	.004	.0000	.61	.65	.45	232
“ P. Sta.....	v. sl.	v. sl.	.61	4.10	1.70	2.40	.0022	.0219	.0199	.0020	.28	.006	.0000	.74	1.00	.60	1431
“ Supt's. Office	sl.	sl.	.63	4.30	1.70	2.60	.0018	.0224	.0198	.0026	.27	.007	.0000	.76	1.00	.60	2067
Pawt., Intake...	v. sl.	v. sl.	.30	4.25	1.20	3.05	.0030	.0142	.0129	.0013	.32	.010	.0000	.36	1.45	1.00	783
“ Tap.....	v. sl.	v. sl.	.29	4.15	1.15	3.00	.0030	.0125	.0120	.0005	.31	.010	.0000	.33	1.45	1.00	1297
Bristol, P. Sta...	dist.	dist.	.85	7.00	2.50	4.50	.0044	.0341	.0310	.0031	1.04	.007	.0001	1.09	1.90	.90	3395
“ Tap. Clerk's Office.....	sl.	dec.	.84	7.60	2.65	4.95	.0038	.0367	.0295	.0072	1.06	.011	.0001	1.10	2.05	1.05	2987
Narrag., P. Sta..	sl.	sl.	.83	4.75	1.70	3.05	.0030	.0199	.0181	.0018	.60	.009	.0000	.82	.80	.45	1887
Narrag. Office Water Co.....	sl.	sl.	.80	4.85	1.65	3.20	.0014	.0187	.0168	.0019	.60	.010	.0000	.77	.85	.50	1372
Narrag., Glad- stone Spring...	0	0	.00	7.25	1.55	5.70	.0002	.0010	.....	.....	1.24	1.49	.0000	.00	2.10	1.10	126

*Averages of Results of Chemical and Bacteriological Examinations of all the Water Supplies in the State, January to December inclusive, for the year 1903.—Concluded.*

(Parts in 100,000.)

	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.			NITRO- GEN.			Oxygen Consumed.	Hardness.	Alkalinity.	Bacteria per c. c.	
	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.					As Nitrites.
								Total.	In Solution.	In Suspension.							
Newp't, Easton's Pond.....	dec.	dist.	.30	8.85	2.90	5.95	.0146	.0537	.0373	.0164	1.46	.029	.0004	.68	2.75	1.80	1613
Newp't, Eng. Cot- tage.....	sl.	sl.	.26	9.65	2.70	6.95	.0211	.0379	.0315	.0064	1.95	.047	.0004	.52	3.25	2.15	2886
Newport, Office Bd. of Health .	sl.	sl.	.25	10.00	2.90	7.10	.0119	.0389	.0297	.0092	1.96	.051	.0005	.51	3.30	2.20	2734
Jamestown, No. P. Station.....	sl.	sl.	.81	7.00	2.50	4.50	.0069	.0394	.0344	.0050	1.07	.036	.0001	.94	1.75	.95	4835
Jamestown, So. P. Station.....	0	v. sl.	.06	14.35	3.90	10.45	.0017	.0083	.0077	.0006	3.21	.386	.0002	.20	4.55	1.65	*
Jamestown, Wat- son's Store....	sl.	sl.	.81	7.65	2.65	5.00	.0035	.0373	.0328	.0045	1.13	.038	.0002	.91	2.25	1.45	2662
Westerly, P. Sta.	0	0	.00	5.00	.80	4.20	.0001	.0013	.....	.....	.53	.049	.0000	.00	1.95	1.65	41
Westerly Drink- ing Fountain..	0	0	.00	5.05	.85	4.20	.0001	.0015	.....	.....	.53	.049	.0000	.00	1.95	1.65	10
East Prov. P. Sta	sl.	sl.	.52	6.95	1.90	5.05	.0078	.0225	.0195	.0030	.74	.033	.0006	.56	2.15	.95	4900
E. Prov. Mechan- ical Filter.....	0	0	.04	6.65	1.20	5.45	.0072	.0074	.....	.....	.75	.032	.0006	.14	2.30	.50	115
New Shoreham, Sands' Pond...	v. sl.	v. sl.	.19	8.35	1.60	6.75	.0016	.0191	.0172	.0019	2.66	.013	.0000	.15	2.10	1.15	2620

\* Questionable.





EXAMINATION OF RAW  
AND  
TREATED SEWAGES.



## EXAMINATION OF RAW AND TREATED SEWAGES.

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One of the most difficult problems presented for solution is the disposal of sewage wastes by cities, towns, and large institutions.

Few inland towns are so located as to make it possible to discharge their crude sewage into a nearby flowing stream or a large body of water.

In most cases it is necessary that the sewage shall be treated in some way before being finally disposed of or a nuisance will be created sooner or later which will demand attention.

In England and Germany much study has been given to the investigation and management of sewage disposal plants, and the boards of health are in a position to give advice to any town desirous of correcting its unsanitary conditions.

Inasmuch as no two towns have the same character of sewage, it is necessary to determine at least a slightly different form of treatment for each.

The population of the town, the character of the population, the introduction of manufacturing wastes, the presence of an ample supply of water, the utilization of the common sewage pipes for the removal of surface water, all have an influence and may modify materially the density and the composition of the sewage.

The State of Massachusetts has for many years maintained a continuous study of the variable factors, publishing the results of their investigations yearly. As the towns of our neighboring State are constituted most like our own cities and villages, a study of the reports is of valuable assistance. With the same end in view, this Board has, with its facilities for chemical and bacteriological analyses, undertaken to determine the varying conditions attending the dis-

posal of sewage wastes of those cities in the State which have made an effort to purify their sewage before final disposal. At the present time this includes the cities of Pawtucket, Woonsocket, Central Falls, and Providence.

All of these cities, realizing that to dispose of their crude sewage by delivering it untreated into streams near them would sooner or later call for censure, have made provision to meet the existing conditions.

By periodical examination of the crude sewage at each plant, and of the effluent, or sewage which has been treated by the various processes of sedimentation, septic fermentation, filtration, or by chemicals, it has been possible to determine the effectiveness of each process.

The Board has thus been in a position to advise the engineering departments of the different cities in what way greater efficiency might be attained. This information has been acted upon in many cases, and the several engineers have a full understanding of the value of each portion of their plant in the treatment of their own particular sewage.

The city of Pawtucket in 1894 installed a filtration system for the treatment of the sewage received from that portion of the city known as the Moshassuck river drainage area. The balance of the sewage is discharged untreated directly into the Blackstone river.

This system consists of two tanks 100 feet long, 30 feet wide, and 3 feet deep. One of these tanks is allowed to fill and the solids to settle. The supernatant fluid is allowed to flow upon the sand filter beds as soon as a tank becomes filled. The second tank is then utilized in the same way. The filter beds consist of 16 beds of carefully selected sand of proper size for the purpose of filtering sewage.

The beds are flowed or dosed in rotation permitting of a period of rest and oxidation of the sewage material which has been caught in the beds. After several months of use the surface of the beds for a depth of a fraction of an inch are scraped off and in time this is replaced with new sand.

The plant has been operated by the city engineer, Mr. George A. Carpenter. With his co-operation the laboratory of this department has been enabled to obtain a profitable understanding of the best means of treatment of the Pawtucket sewage.

This data is also of use in assisting other cities and towns which are now using, or may in the future be obliged to use, some means of purification.

The septic process which had been operated since December, 1902, was discontinued on March 16, 1903, it having been found that the removal of the sludge from the septic tanks meant much later expense and trouble. It was decided to try the advantages of straight sedimentation alone, not allowing the sewage in the tanks to pass through the septic fermentation and disintegration.

A detailed account, with data on the operation of this plant, will be found in the report of the city engineer of Pawtucket, on pages 31-36 of this report.

At Central Falls, where similar tanks are utilized for the treatment of the sewage, the septic process has been continued. The result obtained may be found upon pages 18-22 of this report, being a portion of the report of W. F. Keene, city engineer.

The method of disposal of the sewage from the city of Woonsocket is to receive the flow in a sedimentation gallery or dosing tank from which it goes on to the several beds prepared for that purpose. For extracts from City Engineer F. H. Mills's report see pages 48-49 in this report.

Comparison of the difference sewages as received for treatment shows that the heaviest sewage is supplied by the city of Central Falls, the next heaviest sewage is supplied by the city of Pawtucket, and the least concentrated is from the city of Woonsocket.

The city of Providence, having such a large amount of sewage to be disposed of, treats the same by chemical precipitation. The strength of the sewage in organic matter is about the same as that of the city of Woonsocket.

The sewage is mixed with measured quantities of lime and sulphate of iron while flowing through the main outfall sewer. It then passes through large deep cement basins, while the coagulated sewage and chemicals settle or precipitate. The supernatant liquor is then flowed into other tanks for further sedimentation. The accumulated sediment or sludge is flowed into a sump well, pumped into sludge basins, and further condensed. The sludge obtained is forced into presses and the water squeezed through cloth. The somewhat dry cake resulting is carried by means of a small tramway to sand pits and there dumped. The sludge has no value as a fertilizer. This is the second full year of the operation of this plant. An abbreviated account of the working of this plant, as given in the report of City Engineer Otis F. Clapp, will be found on pages 46 and 47 of this report, but no analyses were made by this Board during this year.

The results shown in the following tables offer an opportunity for study of the methods of treatment of sewage which might be utilized to improve the character of the same before being discharged into streams.



## Pawtucket Sewage.\*

*Chemical and Bacteriological Examination of the Sewage of the City of Pawtucket, the sample being taken from the day flow as received at the purification plant.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.			NITRO-GEN.			Oxygen Consumed.	Bacteria per c. c.	
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	In Solution.	In Suspension.	Free.	Albuminoid.			Chlorine.	As Nitrates.			As Nitrites.
										Total.	In Solution.	In Suspension.					
Jan. ....	20	21	.....	.....	.....	83.4	59.2	24.2	7.00	1.00	.50	.50	9.34	.....	.....	14.00	10,680,000
Feb. ....	3	5	.....	.....	.....	77.8	48.2	29.6	5.50	.98	.41	.57	6.78	.....	.....	11.60	27,110,000
† March ) April. (	31	1	.....	.....	.....	81.2	53.8	27.4	6.80	1.16	.89	.27	8.44	.....	.....	14.00	80,600,000
April. ....	14	15	.....	.....	.....	103.4	50.4	53.0	6.80	1.45	.64	.81	9.40	.....	.....	11.50	39,680,000
April. ....	28	29	.....	.....	.....	102.8	57.8	45.0	9.00	1.74	.88	.86	11.38	.....	.....	12.80	24,800,000
May. ....	12	13	.....	.....	.....	106.4	66.6	39.8	8.00	1.53	.70	.83	12.66	.....	.....	13.20	29,340,000
May. ....	26	27	.....	.....	.....	108.4	67.2	41.2	7.20	1.14	.63	.51	10.08	.....	.....	13.20	29,760,000
June. ....	9	10	.....	.....	.....	89.6	62.0	27.6	7.00	1.11	.64	.47	11.38	.....	.....	9.00	44,020,000
June. ....	23	24	.....	.....	.....	88.6	53.4	35.2	7.00	1.21	.53	.68	8.96	.....	.....	11.30	17,050,000
July. ....	7	8	.....	.....	.....	112.4	69.8	42.4	7.00	1.11	.65	.46	8.98	.....	.....	13.40	Lost
July. ....	22	23	.....	.....	.....	72.0	50.8	21.2	6.80	.81	.43	.38	9.16	.....	.....	9.70	14,300,000
Aug. ....	17	18	.....	.....	.....	115.8	64.8	51.0	9.00	1.82	.61	1.21	11.58	.....	.....	14.80	Lost
Sept. ....	8	9	.....	.....	.....	113.4	68.0	45.4	8.40	1.68	.62	1.06	11.80	.....	.....	18.40	24,770,000
Sept. ....	22	23	.....	.....	.....	131.0	65.8	65.2	8.60	1.59	.58	1.01	12.80	.....	.....	13.30	17,800,000
Oct. ....	7	8	.....	.....	.....	111.4	59.0	52.4	7.20	1.60	.52	1.08	11.80	.....	.....	16.20	‡478,640,000
Oct. ....	20	21	.....	.....	.....	108.0	58.0	50.0	8.20	1.66	.64	1.02	9.64	.....	.....	14.00	12,400,000
Nov. ....	5	5	.....	.....	.....	110.6	55.6	55.0	11.20	1.58	.56	1.02	9.02	.....	.....	14.30	53,320,000
Nov. ....	15	15	.....	.....	.....	83.0	45.6	37.4	9.40	1.61	.72	.89	10.40	.....	.....	11.40	17,300,000
§ Dec. ....	1	2	.....	.....	.....	135.8	53.6	82.2	9.20	1.61	.74	.87	8.80	.....	.....	21.60	24,180,000
§ Dec. ....	15	16	.....	.....	.....	143.6	49.0	94.6	7.00	1.89	.68	1.21	8.56	.....	.....	21.80	29,960,000
§ Dec. ....	29	30	.....	.....	.....	118.2	48.8	69.4	8.00	1.50	.69	.81	7.60	.....	.....	20.50	9,915,000
Dec. ....	1	2	.....	.....	.....	88.4	48.2	40.2	9.20	1.27	.75	.52	8.80	.....	.....	15.40	13,590,000
Dec. ....	15	16	.....	.....	.....	93.2	69.0	24.2	9.20	1.39	.87	.52	13.86	.....	.....	18.30	** ?
Dec. ....	29	30	.....	.....	.....	108.0	65.6	42.4	10.20	1.47	.94	.53	9.98	.....	.....	18.50	7,970,000

\*See also pages 31-36 of this report.

†From here on sewage is that which is taken before passing

screen.  
‡Too high?

§Sewage before passing screen.

\*\*1,211,480,000.

||Sewage

after passing screen.

## Pawtucket Sewage.\*

*Chemical and Bacteriological Examination of the Sewage of the City of Pawtucket, the sample being the supernatant liquor as flowing onto beds after holding sewage in settling tank.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.			NITRO-GEN.			Oxygen Consumed.	Bacteria per c. c.
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	In Solution.	In Suspension.	Free.	Albuminoid.			As Nitrates.	As Nitrites.		
										Total.	In Solution.	In Suspension.				
Jan. ....	7	8	.....	.....	.....	45.0	30.4	14.6	3.40	.42	.25	.17	4.40	.....	4.40	12,230,000
Jan. ....	20	21	.....	.....	.....	53.4	42.2	11.2	5.10	.56	.43	.13	6.60	.....	7.50	†107,880,000
Mar. .... April. ....	31	1	.....	.....	.....	67.0	51.0	16.0	6.80	.97	.53	.44	7.98	.....	10.30	20,460,000
April. ....	14	15	.....	.....	.....	65.4	50.2	15.2	7.00	.95	.60	.35	9.72	.....	6.80	36,580,000
April. ....	27	28	.....	.....	.....	73.0	55.2	17.8	8.40	.99	.71	.28	11.60	.....	9.60	18,600,000
May. ....	12	13	.....	.....	.....	76.6	58.0	18.6	8.00	.87	.71	.16	11.62	.....	10.30	32,860,000
May. ....	26	27	.....	.....	.....	71.6	55.6	16.0	7.20	.85	.62	.23	9.22	.....	8.90	14,880,000
June. ....	9	10	.....	.....	.....	71.6	56.8	14.8	7.20	.97	.87	.10	10.20	.....	7.00	18,600,000
June. ....	23	24	.....	.....	.....	63.6	50.0	13.6	7.20	1.09	.57	.52	8.20	.....	9.30	18,600,000
July. ....	7	8	.....	.....	.....	84.4	62.0	22.4	7.00	.95	.65	.30	10.40	.....	9.30	Lost
July. ....	23	23	.....	.....	.....	66.0	50.4	15.6	6.00	.68	.42	.26	10.68	.....	7.40	16,360,000
Aug. ....	6	7	.....	.....	.....	58.8	46.0	12.8	8.20	.96	.48	.48	9.80	.....	6.70	26,660,000
Aug. ....	17	18	.....	.....	.....	75.6	61.6	14.0	9.00	.99	.61	.38	10.80	.....	10.20	Lost
Sept. ....	8	9	.....	.....	.....	75.6	63.2	12.4	8.20	1.07	.77	.30	11.02	.....	9.80	6,138,000
Sept. ....	22	23	.....	.....	.....	77.8	64.2	13.6	8.60	.76	.54	.22	12.58	.....	8.70	8,830,000
Oct. ....	7	8	.....	.....	.....	71.0	54.0	17.0	9.00	1.10	.74	.36	10.62	.....	8.80	4,070,000
Oct. ....	20	21	.....	.....	.....	74.2	50.6	23.6	8.00	1.11	.76	.35	9.00	.....	10.50	7,460,000
Nov. ....	4	5	.....	.....	.....	65.0	47.6	17.4	8.20	1.15	.59	.56	8.76	.....	8.00	8,740,000
Nov. ....	15	16	.....	.....	.....	58.8	46.4	12.4	6.40	1.02	.61	.41	9.02	.....	8.70	7,800,000
Dec. ....	15	16	.....	.....	.....	102.2	81.0	21.2	7.80	1.29	.83	.46	18.62	.....	19.40	22,320,000
Dec. ....	29	30	.....	.....	.....	76.4	51.8	24.6	9.40	1.03	.63	.40	8.96	.....	13.30	14,880,000

\* See also pages 31-36 of this report.

† Too high count?

## Pawtucket Sewage.\*

*Chemical and Bacteriological Examination of the Effluent or Filtered Sewage of the City of Pawtucket, being taken from the effluent pipe from regular sand beds 5-16.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.		RESIDUE ON EVAPORATION.				AMMONIA.				NITROGEN.			Oxygen Consumed.	Bacteria per c. c.	BED No.
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.			
										Total.	In Solution.	In Suspension.						
Jan. ....	7	8	v. sl.	sl.	.12	26.1	8.7	17.4	1.36	.0340	.0320	.0020	3.96	2.19	.0100	.52	39,000	Bed 5.
Jan. ....	20	21	dec.	sl.	.35	31.0	14.7	16.3	3.36	.1120	.1120	.0000	6.08	0.31	.0240	2.44	3,565,000	Bed 15.
Feb. ....	3	5	sl.	v. sl.	.39	28.9	9.7	19.2	2.56	.0740	.0680	.0060	5.60	1.19	.0200	1.00	25,500	Beds 12 and 13.
Mar. ....	31	1	dec.	br. dec.	.35	61.1	30.9	30.2	2.20	.0980	.0460	.0520	4.16	5.83	.1520	1.16	13,800	Beds 10 and 11.
April. ....	14	15	0	v. sl.	.15	50.8	18.7	32.1	0.80	.0520	.0400	.0120	7.78	3.26	.0030	0.57	2,300	Bed 6.
April. ....	27	28	dec.	dec.	.27	58.9	21.0	37.9	1.16	.1140	.0700	.0440	9.58	4.04	.0140	1.72	17,950	Beds 6 and 7.
May. ....	12	13	v. sl.	sl.	.17	51.5	20.8	30.7	1.00	.0960	.0400	.0560	8.80	3.60	.0100	1.02	4,000	Beds 7, 8 and 9.
May. ....	26	27	dec.	sl.	.50	52.2	15.6	36.6	1.64	.0780	.0520	.0260	10.42	3.39	.0400	1.43	90,000	Bed 6.
May. ....	26	27	v. sl.	sl.	.23	54.4	15.0	39.4	0.92	.0540	.0440	.0100	8.78	4.30	.0120	0.92	7,350	Beds 12 and 13.
June. ....	9	10	sl.	hyd. dec.	.26	47.3	11.8	35.5	1.40	.0960	.0540	.0420	9.58	2.72	.0100	1.10	8,200	Bed 5.
June. ....	9	10	v. sl.	sl.	.24	50.0	12.9	37.1	1.28	.0500	.0460	.0040	8.56	3.51	.0060	0.76	2,900	Bed 7.
June. ....	23	24	v. sl.	dec.	.16	53.5	27.1	26.4	0.90	.0700	.0320	.0380	7.80	2.72	.0130	0.78	550,000	Bed 9.
June. ....	23	24	v. sl.	hyd. dec.	.16	53.6	24.7	28.9	0.90	.0600	.0420	.0180	7.30	3.07	.0080	0.73	101,500	Beds 10 and 11.
July. ....	7	8	v. sl.	hyd. sl.	.25	52.0	21.1	30.9	1.10	.0600	.0400	.0200	8.40	3.51	.0140	1.10	6,600	Bed 6.
July. ....	7	8	sl.	sl.	.35	35.2	11.6	23.6	1.40	.0560	.0540	.0020	9.00	1.02	.0420	1.99	458,800	Bed 16.
July. ....	22	23	v. sl.	sl.	.25	39.7	10.1	29.6	1.30	.0440	.0400	.0040	8.64	3.25	.0100	1.02	24,300	Bed 6.
July. ....	22	23	sl.	sl.	.21	45.9	14.6	31.3	2.76	.0600	.0480	.0120	7.54	2.32	.2300	0.98	38,500	Bed 15.
Aug. ....	6	7	v. sl.	hyd. sl.	.16	54.5	20.6	33.9	0.80	.0620	.0320	.0320	8.96	4.38	.0200	0.69	Lost	Beds 7 and 8.
Aug. ....	6	7	v. sl.	hyd. dec.	.24	54.1	35.1	49.0	1.60	.0940	.0720	.0220	7.24	7.98	.0260	1.02	Lost	Bed 11.
Aug. ....	17	18	v. sl.	hyd. dec.	.18	53.4	19.7	33.7	1.40	.0840	.0400	.0440	8.18	3.86	.0120	0.55	Lost	Bed 5.
Aug. ....	17	18	v. sl.	v. sl.	.11	49.0	17.0	32.0	0.42	.0360	.0360	.0000	7.86	3.49	.0260	0.90	Lost	Bed 16.
Sept. ....	8	9	0	v. sl.	.15	49.1	16.2	32.9	0.70	.0380	.0320	.0060	8.60	4.04	.0100	0.55	4,000	Bed 10.
Sept. ....	8	9	dec.	sl.	.35	59.9	24.8	35.1	1.10	.1280	.1060	.0220	9.78	3.95	.0080	0.90	25,000	Bed 14.
Sept. ....	22	23	dec.	sl.	.35	52.8	22.4	30.4	1.60	.1040	.0860	.0180	11.18	3.13	.0440	1.48	†	Bed 5.
Sept. ....	22	23	dec.	dec.	.40	54.4	23.8	30.6	2.20	.1660	.1140	.0520	10.34	3.60	.0100	1.73	36,000	Bed 15.
Oct. ....	7	8	sl.	dec.	.37	53.0	19.0	33.5	3.40	.1520	.0540	.0980	9.56	4.11	.0340	1.91	13,800	Bed 6.

\* See also pages 31-36 of this report.

## Pawtucket Sewage.\*

*Chemical and Bacteriological Examination of the Effluent or Filtered Sewage of the City of Pawtucket, being taken from the effluent pipe from regular sand beds 5-16.—Concluded.*  
(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Bacteria per c. c.	Bed No.
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.			
										Total.	In Solution.	In Suspension.						
Oct.....	7	8	dec.	v. sl.	.16	46.4	11.6	34.8	0.88	.0820	.0520	.0300	9.22	3.23	.0300	1.07	1,900	Bed 16.
Oct.....	20	21	sl.	v. sl.	.30	46.9	14.0	32.9	1.26	.0800	.0440	.0360	8.18	3.60	.0120	0.81	157,000	Bed 10.
Oct.....	20	21	v. sl.	v. sl.	.20	48.4	15.7	32.9	1.20	.0360	.0340	.0020	7.42	3.96	.0020	0.57	1,776,000	Bed 12.
Nov.....	4	5	sl.	v. sl.	.32	47.0	13.7	33.3	1.38	.0700	.0440	.0260	8.22	4.38	.0220	0.85	10,300	Beds 7, 8, and 9.
Nov.....	4	5	sl.	v. sl.	.35	53.6	17.9	35.7	2.00	.0860	.0740	.0120	7.80	5.27	.0140	1.00	5,759,800	Bed 14.
Nov.....	15	16	v. sl.	dist.	.15	39.7	11.6	28.1	1.32	.0640	.0360	.0280	7.60	3.51	.0120	0.88	800	Bed 5.
Nov.....	15	16	v. sl.	dist.	.11	39.3	11.2	28.1	0.62	.0260	.0260	.0000	7.04	4.40	.0020	0.60	1,000	Bed 15.
Dec.....	1	2	dec.	dec.	br.	39.4	14.8	24.6	3.76	.3300	.3120	.0180	8.26	0.96	.0320	4.02	164,000	Bed 16.
Dec.....	15	16	dec.	sl.	br.	33.6	10.5	23.1	3.64	.2360	.2000	.0360	8.24	0.99	.0280	2.80	Lost	Bed 5.
Dec.....	29	30	dec.	dec.	br.	31.3	8.6	22.7	4.40	.2100	.1880	.0220	7.66	0.54	.0060	2.30	103,800	Beds 10 and 11.

### †Chemical and Bacteriological Examination of Pawtucket Effluent at River.

Feb.....	3	5	dec.	sl.	.50	26.4	9.0	17.4	1.20	.1820	.1040	.0780	3.02	0.21	.1500	2.33	20,305,000	.....
Mar.....	19	20	sl.	sl.	.65	23.2	7.5	15.7	1.56	.2600	.1400	.1200	2.96	0.34	.0100	2.20	438,500	.....
Mar.....	31	1	sl.	dec.	.26	19.8	6.6	13.2	0.20	.0880	.0640	.0240	2.00	0.56	.0120	1.25	2,188,600	.....
April.....	14	15	v. sl.	sl.	.19	23.7	6.7	17.0	0.52	.0020	.0740	.0180	2.58	0.06	.0100	0.78	3,205,000	.....
April.....	27	28	dec.	dec.	.40	25.9	7.6	18.3	1.02	.1500	.0860	.0640	3.60	0.63	.1600	1.70	4,829,000	.....

### Chemical and Bacteriological Examination of Miscellaneous Pawtucket Sewage Samples.

																		Source of Sample.
Jan.....	7-8	8	.....	.....	.....	74.4	44.8	29.6	6.00	1.13	.49	.64	6.78	.....	.....	13.90	17,760,000	Mixed (day and night.)
Jan.....	7-8	8	.....	.....	.....	69.2	44.6	24.6	5.60	.84	.56	.28	6.80	.....	.....	10.90	5,840,000	Night flow.
Feb.....	3-4	5	.....	.....	.....	40.2	31.6	8.6	3.40	.54	.39	.15	5.18	.....	.....	6.20	17,550,000	Night flow.
Jan.....	7-8	8	.....	.....	.....	52.4	39.2	13.2	4.00	.50	.27	.23	5.24	.....	.....	7.70	5,730,000	Septic sewage.
Jan.....	20	21	.....	.....	.....	66.4	50.2	16.2	6.00	.61	.47	.14	7.12	.....	.....	10.40	13,690,000	Septic sewage.
Feb.....	3	5	.....	.....	.....	63.4	57.0	6.4	4.60	.65	.44	.21	6.98	.....	.....	9.40	17,360,000	Septic sewage.

\* See also pages 31-36 of this report. † Less than 500. ‡ This sample being a mixture of underdrains with West Avenue sewage.

## Central Falls Sewage.\*

*Chemical and Bacteriological Examination of the Sewage of the City of Central Falls, the sample being taken from the sewage flow as received at the purification plant.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.			NITRO-GEN			Oxygen Consumed.	Bacteria per c. c.	
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	In Solution.	In Suspension.	Free.	Albuminoid.			Chlorine.	As Nitrates.			As Nitrites.
										Total.	In Solution.	In Suspension.					
Jan.....	14	15	.....	.....	.....	210.2	151.0	59.2	9.80	2.75	1.71	1.04	21.04	.....	.....	29.30	8,745,000
Jan.....	28	29	.....	.....	.....	71.6	53.4	18.2	7.00	1.30	0.82	0.48	.....	.....	.....	9.90	4,420,000
Feb.....	11	12	.....	.....	.....	167.6	112.4	55.2	8.20	2.05	0.81	1.24	14.58	.....	.....	27.10	11,928,000
†Feb.....	25	26	.....	.....	.....	99.2	35.8	63.4	2.80	.55	0.25	0.30	5.62	.....	.....	10.70	1,950,000
Mar.....	10	11	.....	.....	.....	366.0	88.4	277.6	17.60	4.70	1.55	3.15	16.76	.....	.....	43.60	72,230,000
Mar.....	24	25	.....	.....	.....	157.4	110.4	47.0	8.40	2.17	1.13	1.04	12.40	.....	.....	21.00	36,580,000
April.....	6	7	.....	.....	.....	531.4	131.6	399.8	9.00	4.86	1.21	3.65	15.64	.....	.....	44.40	31,930,000
April.....	20	21	.....	.....	.....	150.4	93.2	57.2	7.80	2.14	1.08	1.06	13.04	.....	.....	16.50	39,680,000
May.....	5	6	.....	.....	.....	172.4	116.2	56.2	12.20	2.40	1.25	1.15	22.20	.....	.....	20.00	34,350,000
May.....	18	19	.....	.....	.....	143.6	91.6	52.0	8.00	2.03	.94	1.09	14.62	.....	.....	19.50	34,100,000
May..... June.....	31	2	.....	.....	.....	80.4	64.0	16.4	16.20	1.55	.86	0.69	15.10	.....	.....	10.40	6,250,000
June....	16	16	.....	.....	.....	55.2	46.0	9.2	8.20	1.00	.56	0.44	9.50	.....	.....	7.30	6,130,000
June....	29	30	.....	.....	.....	151.0	102.8	48.2	10.00	2.06	1.07	0.99	12.40	.....	.....	20.70	29,140,000

\* See also pages 18-22 of this report.

† This sample of sewage mixed with surface water; trap closed.



## Central Falls Sewage.\*

*Chemical and Bacteriological Examination of the Sewage of the City of Central Falls, the sample being taken from the well before entering septic tank.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.				NITRO-GEN		Oxygen Consumed.	Bacteria per c. c.	
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	In Solution.	In Suspension.	Free.	Albuminoid.			Chlorine.	As Nitrates.			As Nitrites.
										Total.	In Solution.	In Suspension.					
Jan.....	28	29	.....	.....	.....	225.0	49.8	175.2	9.60	2.52	.75	1.77	.....	.....	31.30	32,860,000	
Feb.....	25	26	.....	.....	.....	182.8	123.0	59.8	13.00	2.74	1.95	.79	17.64	.....	28.90	12,210,000	
Mar.....	10	11	.....	.....	.....	166.0	71.4	94.6	13.00	1.45	1.28	.17	14.04	.....	21.30	13,640,000	
Mar.....	24	25	.....	.....	.....	236.4	129.8	106.6	11.20	3.44	1.66	1.78	14.08	.....	33.40	51,460,000	
May.....	5	6	.....	.....	.....	194.0	119.6	74.4	12.40	2.31	1.28	1.03	22.18	.....	20.60	27,510,000	
May.....	18	19	.....	.....	.....	146.4	80.2	66.2	8.20	1.91	.77	1.14	13.38	.....	16.90	16,120,000	
May... June...†	31	2	.....	.....	.....	87.6	73.8	13.8	22.00	1.16	.97	.19	16.82	.....	11.30	2,710,000	
June....	16	16	.....	.....	.....	230.6	75.0	145.6	11.20	3.65	.93	2.72	14.64	.....	22.70	14,260,000	
June....	29	30	.....	.....	.....	217.6	159.4	58.2	10.00	2.10	1.39	.71	26.60	.....	20.20	50,220,000	
July....	14	14	.....	.....	.....	485.4	112.4	373.0	12.20	10.00	1.36	8.64	19.64	.....	59.00	77,500,000	
July....	27	28	.....	.....	.....	168.6	99.0	69.6	11.20	2.58	.83	1.75	17.26	.....	20.50	24,800,000	
Aug....	10	11	.....	.....	.....	650.4	585.0	65.4	9.00	7.12	3.37	3.75	265.5	.....	29.10	34,720,000	
Sept....	14	15	.....	.....	.....	287.2	218.4	68.8	11.80	3.36	1.31	2.05	79.0	.....	15.60	34,720,000	
Sept....	28	29	.....	.....	.....	155.4	112.2	43.2	8.20	1.88	1.09	.79	20.58	.....	22.00	36,880,000	
Oct....	14	15	.....	.....	.....	157.0	96.0	61.0	9.20	1.34	.77	.57	14.20	.....	22.30	23,560,000	
Oct....	26	27	.....	.....	.....	242.6	171.0	71.6	9.80	2.54	1.16	1.38	26.82	.....	33.20	13,640,000	
Nov....	9	10	.....	.....	.....	179.8	111.6	68.2	10.20	1.70	.83	.87	17.78	.....	26.50	16,120,000	
Nov....	23	24	.....	.....	.....	231.2	152.2	79.0	11.00	3.06	1.44	1.62	20.62	.....	33.20	21,080,000	
Dec....	7	8	.....	.....	.....	216.0	134.4	81.6	11.80	2.61	1.51	1.10	20.38	.....	34.90	16,740,000	

\* See also pages 18-22 of this report.

† Salt comes from a pickling factory.



## Central Falls Sewage.\*

*Chemical and Bacteriological Examination of the Sewage of the City of Central Falls, the sample being taken from the septic tank.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.			NITRO-GEN.			Oxygen Consumed.	Bacteria per c. c.	
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	In Solution.	In Suspension.	Free.	Albuminoid.			Chlorine.	As Nitrates.			As Nitrites.
										Total.	In Solution.	In Suspension.					
Jan.....	14	15	.....	.....	.....	102.0	82.2	19.8	13.00	1.17	.93	.24	19.12	.....	12.80	15,500,000	
Jan.....	28	29	.....	.....	.....	67.4	52.6	14.8	7.20	.63	.53	.10	.....	.....	9.00	7,435,000	
Feb.....	11	12	.....	.....	.....	126.6	103.6	23.0	13.00	1.31	1.15	0.16	21.78	.....	16.30	13,020,000	
Feb.....	25	26	.....	.....	.....	89.6	67.0	22.6	11.20	1.10	.60	.50	15.00	.....	12.40	3,170,000	
Mar.....	10	11	.....	.....	.....	105.4	76.0	29.4	12.80	1.28	.82	.46	17.82	.....	14.80	6,620,000	
Mar.....	24	25	.....	.....	.....	89.6	67.2	22.4	12.00	.64	.56	.08	16.88	.....	9.60	3,960,000	
April....	6	7	.....	.....	.....	105.8	79.8	26.0	14.20	1.19	.49	.70	21.64	.....	8.70	8,480,000	
April....	20	21	.....	.....	.....	105.4	81.8	23.6	14.00	1.54	.97	.57	18.44	.....	14.60	7,350,000	
May.....	5	6	.....	.....	.....	123.2	78.6	44.6	14.00	1.39	.72	.67	19.92	.....	11.80	4,640,000	
May.....	18	19	.....	.....	.....	104.0	80.2	23.8	14.00	1.04	.65	.39	18.28	.....	9.90	4,630,000	
May..... / June.....	31	2	.....	.....	.....	75.9	63.8	12.1	14.00	.67	.38	.29	22.44	.....	8.50	940,000	
June....	16	16	.....	.....	.....	88.8	75.0	13.8	14.40	.69	.60	.09	21.68	.....	8.00	1,810,000	
June....	29	30	.....	.....	.....	108.4	99.0	9.4	15.00	.86	.68	.18	36.55	.....	9.10	2,355,000	
July.....	14	14	.....	.....	.....	123.4	102.0	21.4	13.80	.88	.43	.45	34.00	.....	9.80	8,325,000	
July....	27	28	.....	.....	.....	91.2	75.0	16.2	13.20	.69	.56	.13	16.78	.....	10.00	5,375,000	
Aug.....	10	11	.....	.....	.....	94.4	80.8	13.6	14.00	.97	.54	.43	20.72	.....	10.80	Lost	
Sept....	14	15	.....	.....	.....	91.6	81.6	10.0	14.00	.95	.65	.30	15.94	.....	8.60	34,100,000	
Sept....	28	29	.....	.....	.....	85.4	72.8	12.6	11.00	.85	.64	.21	15.86	.....	9.70	2,400,000	
Oct.....	14	15	.....	.....	.....	120.0	97.8	22.2	16.00	.80	.70	.10	30.02	.....	9.40	3,360,000	
Oct.....	26	27	.....	.....	.....	111.6	87.8	23.8	15.60	1.40	1.04	.36	23.50	.....	12.70	25,420,000	
Nov.....	9	10	.....	.....	.....	96.8	70.4	26.4	12.20	1.43	.58	.55	15.62	.....	13.20	1,660,000	
Nov....	23	24	.....	.....	.....	100.4	76.2	24.2	15.40	1.30	.85	.45	15.78	.....	13.30	6,250,000	
Dec.....	7	8	.....	.....	.....	102.8	73.0	29.8	16.20	1.66	.92	.74	16.38	.....	13.10	8,380,000	

\* See also pages 18-22 of this report.

## Central Falls Sewage.\*

*Chemical and Bacteriological Examination of the Sewage Effluent of the City of Central Falls, the sample being taken from beds 1, 2, and 3.*

(Parts in 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.			Chlorine.	NITRO- GEN.		Oxygen Consumed.	Bacteria per c. c.	
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			As Nitrates.	As Nitrites.			
										Total.	In Solution.						In Suspension.
Jan.....	14	15	sl.	dec.	br.	59.3	13.0	46.3	6.72	.3160	.2480	.0680	19.44	0.19	.0200	2.90	1,069,000
Jan.....	28	29	gr.	dec.	br.	60.3	14.9	45.4	7.52	.3720	.3320	.0400	.....	0.05	.0060	4.54	1,585,000
Feb.....	11	12	gr.	dec.	br.	62.4	14.7	47.7	6.40	.2920	.2720	.0200	19.02	0.01	.0000	3.84	2,790,000
Feb.....	25	26	gr.	dec.	br.	59.1	15.0	44.1	8.96	.3080	.2880	.0200	17.36	0.24	.0320	3.84	485,500
Mar.....	10	11	dec.	sl.	br.	52.5	11.8	40.7	7.20	.2840	.2320	.0520	15.32	0.07	.0200	3.08	12,121,000
Mar.....	24	25	sl.	sl.	br.	47.8	9.1	38.7	5.68	.2840	.1960	.0880	13.84	0.03	.0000	7.72	1,612,000
April....	6	7	dec.	sl.	br.	65.5	11.5	54.0	8.48	.2360	.1440	.0920	20.82	0.04	.0000	3.24	447,500
April....	20	21	dec.	sl.	br.	59.5	8.2	51.3	7.84	.2400	.1800	.0600	18.36	0.40	.0030	2.68	339,500
May.....	5	6	gr.	sl.	br.	71.0	12.1	58.9	8.00	.2760	.2200	.0560	22.98	0.03	.0010	2.74	41,000
May.....	18	19	gr.	dec.	br.	66.9	14.0	52.9	9.76	.2520	.2000	.0520	20.02	0.03	.0050	2.86	†1,743,000
May... June... June...	31	2	gr.	dec.	br.	75.9	12.1	63.8	9.60	.2240	.1920	.0320	24.80	0.01	.0000	3.60	112,000
June....	16	16	dec.	sl.	br.	77.4	9.5	67.9	6.94	.2680	.2400	.0280	25.42	0.11	.0000	2.78	41,000
June....	29	30	sl.	dec.	.95	75.9	11.7	64.2	7.04	.1280	.1160	.0120	22.18	2.06	.1400	1.84	26,250

\* See also pages 18-22 of this report.

† Small fine colonies.

## Central Falls Sewage.\*

*Chemical and Bacteriological Examination of the Sewage Effluent of the City of Central Falls,  
the sample being taken from beds 4 and 5.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.				NITRO-GEN		Oxygen Consumed.	Bacteria per c. c.	
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.			As Nitrites.
										Total.	In Solution.	In Suspension.					
Jan.....	14	15	sl.	sl.	.70	47.3	7.2	40.1	4.32	.1080	.1000	.0080	14.98	1.09	.0060	1.36	139,500
Jan.....	28	29	gr.	sl.	br.	54.6	11.4	43.2	6.40	.2600	.2480	.0120	.....	0.15	.0060	3.42	775,000
Feb.....	11	12	gr.	dec.	br.	55.4	12.9	42.5	7.20	.2040	.1680	.0360	15.62	0.01	.0000	3.96	8,370,000
Feb.....	25	26	gr.	dec	br.	56.1	15.5	40.6	7.04	.3160	.2840	.0320	15.46	0.05	.0002	3.84	347,000
Mar.....	10	11	dec.	sl.	br.	47.1	10.7	36.4	8.16	.2440	.2280	.0160	13.20	0.15	.0040	2.88	214,500
Mar.....	24	25	sl.	sl.	iron. br.	52.0	8.9	43.1	8.00	.1960	.1880	.0080	16.88	0.03	.0000	3.06	166,000
April....	6	7	dec.	sl.	br.	51.0	10.0	41.0	7.84	.1800	.1480	.0320	14.58	0.04	.0040	2.56	330,000
April....	20	21	dec.	sl.	br.	55.5	10.0	45.5	8.80	.2120	.1380	.0740	16.38	0.03	.0000	2.88	442,500
May.....	5	6	gr.	sl.	br.	67.2	11.8	55.4	8.16	.1960	.1300	.0660	23.00	0.03	.0050	2.44	18,000
May.....	18	19	gr.	dec.	br.	72.6	14.3	58.3	8.64	.2480	.1760	.0720	23.00	0.03	.0050	3.28	1,196,000
May... June... }	31	2	gr.	dec.	br.	68.5	8.3	60.2	8.00	.4800	.3920	.0880	21.96	0.01	.0000	3.30	275,000
June....	16	16	dec.	sl.	br.	71.0	8.4	62.6	9.44	.1480	.1440	.0040	22.72	1.15	.0006	2.02	54,500
June....	29	30	dec.	dec.	br.	67.2	9.2	58.0	6.76	.1680	.1480	.0200	19.42	0.13	.0002	2.56	43,250

\* See also pages 18-22 of this report.

## Central Falls Sewage.\*

*Chemical and Bacteriological Examination of the Sewage Effluent of the City of Central Falls, the sample being taken from beds 6-7.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				Chlorine.	NITRO- GEN.		Oxygen Consumed.	Bacteria per c. c.
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.				As Nitrates.	As Nitrites.		
										Total.	In Solution.	In Suspension.					
Jan.....	14	15	sl.	dec.	br.	52.6	11.3	41.3	8.16	2480	2240	.0240	17.42	0.36	.0400	2.72	2,263,000
Jan.....	28	29	gr.	dec.	br.	67.1	17.0	50.1	10.40	5080	4800	.0280	.....	0.11	.0020	5.04	2,170,000
Feb.....	11	12	gr.	dec.	br.	68.2	16.2	52.0	10.40	4480	3000	.1480	21.44	0.01	.0000	4.62	4,743,000
April....	6	7	dec.	sl.	br.	67.9	13.0	54.9	7.20	2760	2040	.0720	20.00	0.04	.0060	3.60	155,100
April....	20	21	dec.	hea.	br.	98.9	35.0	63.9	6.40	4400	2400	.2000	12.82	0.12	.0100	7.00	62,000
May... / June... †	31	2	gr.	dec.	bl.	71.3	19.0	52.3	11.04	1760	1640	.0120	20.02	0.03	.0000	5.10	396,750
June....	16	16	dec.	sl.	br.	.....	.....	.....	5.44	3480	3200	.0280	19.60	0.05	.0010	5.84	24,000
†June...	29	30	sl.	dec.	.45	75.4	15.4	60.0	3.92	.0960	.0720	.0240	17.60	3.09	.0400	1.24	16,500

*Chemical and Bacteriological Examination of the Sewage Effluent of the City of Central Falls, the sample being a mixture of equal portions from all the beds.*

July....	14	14	v. sl.	sl.	.75	74.3	6.7	67.6	4.80	.1200	.1040	.0160	22.42	1.94	.0400	1.65	124,250
July....	27	28	v. sl.	sl.	.55	71.5	12.6	58.9	4.16	.1440	.0920	.0520	19.22	2.71	.0200	1.73	1,032,000
Aug....	10	11	dec.	sl.	.61	65.4	10.5	54.9	4.16	.0800	.0780	.0020	21.42	2.26	.0320	1.34	Lost
Sept....	14	15	v. sl.	sl.	.38	83.6	17.6	66.0	2.80	.1280	.0840	.0440	20.68	3.90	.0600	1.07	1,736,000
Sept....	28	29	v. sl.	v. sl.	.50	78.3	13.7	64.6	3.60	.0940	.0720	.0220	23.78	3.66	.0400	1.04	33,500
Oct....	14	15	v. sl.	sl.	.39	83.4	12.2	71.2	3.60	.0880	.0620	.0260	23.68	4.56	.0200	1.06	25,300
Oct....	26	27	v. sl.	sl.	.45	77.2	13.4	63.8	3.00	.0720	.0640	.0080	23.70	3.90	.0600	1.21	†23,900
Nov....	9	10	dec.	sl.	br.	61.5	11.5	50.0	6.00	.1880	.1840	.0040	Lost	1.23	.....	Lost	68,000
Nov....	23	24	dec.	sl.	br.	72.9	16.2	56.7	6.40	.1500	.0960	.0540	16.98	3.90	.0600	2.07	20,400
Dec....	7	8	dec.	sl.	br.	60.4	13.1	47.3	7.28	.3880	.3000	.0880	17.02	0.11	.0080	3.40	241,800

\* See also pages 18-22 of this report.

†Beds have been cleaned.

‡Also some very fine colonies.

## Central Falls Sewage.\*

*Chemical and Bacteriological Examination of Water taken from stream into which the Effluent of the Central Falls filter beds flows, the sample being taken from the stream at a point two hundred fifty feet below the city line.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN		Oxygen Consumed.	Bacteria per c. c.	
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			Chlorine.	As Nitrates.			As Nitrites.
										Total.	In Solution.	In Suspension.					
Jan. ....	14	15	sl.	sl.	.70	23.1	7.5	20.6	.3000	.0280	.0280	.0000	3.82	.93	.2100	0.48	30,500
Feb. ....	11	12	sl.	sl.	.46	26.0	6.1	19.9	.1700	.0120	.0100	.0020	3.32	.85	.0070	0.34	137,500
Feb. ....	26	26	0	v. sl.	.16	15.5	7.7	7.8	.1100	.0120	.0100	.0020	2.66	.55	.0030	0.29	5,750
Mar. ....	10	11	sl.	iron. sl.	br. iron.	22.3	4.1	18.2	.9800	.0720	.0620	.0100	3.82	.19	.0520	1.21	523,900
Mar. ....	24	25	sl.	sl.	.46	18.0	4.0	14.0	.3200	.0500	.0480	.0020	2.42	.25	.0140	0.97	575,000
April. ....	6	7	sl.	sl.	.28	24.6	6.5	18.1	.4000	.0320	.0300	.0020	3.88	.87	.0080	0.51	128,500
April. ....	20	21	sl.	sl.	.90	25.2	5.6	19.6	.6000	.0360	.0260	.0100	4.42	.75	.0180	0.70	15,700
May. ....	5	6	v. sl.	sl.	br. 1.00	30.6	7.2	23.4	.6400	.0560	.0520	.0040	5.44	.94	.0100	0.96	6,650
May. ....	18	19	v. sl.	dec.	.37	29.4	8.3	21.1	.9000	.0460	.0420	.0040	5.22	.71	.0440	0.63	19,500
July. ....	27	28	v. sl.	sl.	.46	35.3	12.5	22.8	.7000	.0220	.0200	.0020	6.22	1.08	.0200	0.50	13,500
Aug. ....	10	11	sl.	iron. dec.	.24	28.9	8.3	20.6	.5000	.0180	.0180	.0000	4.84	.97	.0160	0.29	Lost
Sept. ....	14	15	0	sl.	.35	31.7	6.6	25.1	.7400	.0260	.0220	.0040	6.72	.85	.0480	0.36	15,717,000
Sept. ....	28	29	dec.	sl.	.46	32.7	7.6	25.1	.4800	.0400	.0340	.0060	6.06	.60	.0560	0.83	280,000
Oct. ....	14	15	v. sl.	sl.	.40	27.6	4.2	23.4	.1800	.0160	.0140	.0020	3.62	.88	.0600	0.35	181,500
Oct. ....	26	27	v. sl.	sl.	.38	30.1	4.7	25.4	.6000	.0200	.0180	.0020	6.60	.65	.0600	0.37	9,000
Nov. ....	9	10	sl.	sl.	iron. br.	30.0	7.1	22.9	.5800	.0280	.0260	.0020	6.00	.81	.0200	0.66	2,500
Nov. ....	23	24	sl.	dec.	br.	27.8	4.8	23.0	.5800	.0200	.0180	.0020	5.42	.73	.0400	.054	24,490
Dec. ....	7	8	v. sl.	sl.	br.	28.2	5.5	22.7	.8400	.0380	.0320	.0060	4.84	.82	.0200	0.45	9,800

\* See also pages 18-22 of this report.



## Woonsocket Sewage.\*

*Chemical and Bacteriological Examination of the Sewage of the City of Woonsocket, the sample being taken from the flow in the thirty-six inch sewer.*

(Parts per 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA.				NITRO- GEN.			Oxygen Consumed.	Bacteria per c. c.
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	In Solution.	In Suspension.	Free.	Albuminoid.			Chlorine.	As Nitrates.	As Nitrites.		
										Total.	In Solution.	In Suspension.					
Jan.....	5	6				41.6	27.2	14.4	1.55	.53	.15	.38	4.82			3.50	890,000
Jan.....	19	20				47.2	37.6	9.6	2.30	.57	.23	.34	7.38			4.70	1,650,000
Feb.....	2	3				71.0	42.0	29.0	3.60	1.02	.40	.62	6.24			10.70	6,440,000
Feb.....	16	17				63.8	43.0	20.8	3.50	.77	.43	.34	4.96			5.70	433,000
Mar.....	2	3				47.4	28.4	19.0	1.30	.49	.31	.18	4.02			6.30	620,000
Mar.....	19	20				51.4	34.6	16.8	2.60	.81	.36	.45	5.62			5.60	1,770,000
April....	6	7				58.4	39.6	18.8	3.00	.85	.45	.40	6.02			7.70	2,970,000
April....	20	21				65.2	38.0	27.2	3.10	.85	.42	.43	5.50			8.50	10,540,000
May.....	11	12				82.2	51.0	31.2	3.30	1.03	.44	.59	8.80			10.40	5,030,000
May.....	25	26				98.4	62.0	36.4	4.50	1.04	.44	.60	9.02			13.60	3,865,000
June....	8	9				112.6	76.6	36.0	4.10	1.40	.59	.81	17.98			12.20	9,630,000
June....	22	23				51.0	33.6	17.4	1.60	.51	.21	.30	5.60			5.90	3,270,000
July.....	13	14				79.4	48.2	31.2	5.00	.95	.40	.55	10.18			10.00	16,120,000
Aug.....	3	4				94.8	60.4	34.4	4.20	1.05	.43	.62	10.10			10.60	9,810,000
Aug.....	17	17				97.2	64.4	32.8	3.00	1.04	.47	.57	8.80			11.80	Lost
Sept....	14	14				70.0	48.6	21.4	2.70	.47	.27	.20	7.40			7.70	12,760,000
Oct.....	5	6				89.2	50.6	38.6	3.10	.87	.35	.52	7.84			12.00	9,460,000
Nov.....	9	9				87.6	51.0	36.6	8.80	1.22	.43	.79	6.84			12.90	2,470,000
Nov.....	23	24				81.8	51.0	30.8	4.00	.95	.51	.44	7.82			11.90	*343,100,000
Dec.....	14	14				106.0	55.6	50.4	3.60	1.02	.57	.45	9.38			14.30	2,980,000
Dec.....	28	29				96.4	50.6	45.8	3.60	1.56	.61	.95	6.98			13.00	6,980,000
Yearly average.						75.8	47.3	28.5	3.45	.90	.40	.50	7.70			9.50	5,667,800

\* Out of average.

\* See also pages 48 and 49 of this report.



## Woonsocket Sewage.\*

*Chemical and Bacteriological Examination of the Sewage Effluent of the City of Woonsocket, the sample being taken from beds 1—4, at the purification plant of that city*

(Parts in 100,000.)

MONTH.	DATE OF		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.				NITROGEN.				Oxygen Consumed.	Bacteria per c. c.	Bed No.
	Collection.	Examination.	Turbidity.	Sediment.	Color.	Total.	Loss on Ignition.	Fixed.	Free.	Albuminoid.			As Nitrates.	As Nitrites.					
										Total.	In Solution.	In Suspension.							
Jan.....	5	6	0	0	.10	19.1	5.0	14.1	.0620	.0160	.0160	.000	3.32	1.25	.0160	0.24	21,000	Bed 1.	
Jan.....	19	20	v. sl.	0	.15	26.9	11.1	15.8	.1120	.0380	.0380	.000	4.24	1.55	.0440	0.39	44,500	Bed 3.	
Feb.....	2	3	sl.	v. sl.	.24	23.6	7.4	16.2	.6000	.0660	.0660	.000	4.02	0.95	.1100	0.70	73,000	No. not given.	
Feb.....	16	17	sl.	v. sl.	.16	22.5	5.2	17.3	.2000	.0700	.0700	.000	4.14	0.87	.0600	0.52	94,500	No. not given.	
Mar.....	2	3	v. sl.	0	.18	25.1	7.2	17.9	.3900	.0640	.0640	.000	3.58	1.61	.1500	0.57	40,650	Bed 4.	
Mar.....	19	20	v. sl.	v. sl.	.40	21.2	5.1	16.1	.6600	.1140	.1140	.000	4.24	0.15	.0320	1.16	580,000	Bed 3.	
April.....	6	7	v. sl.	0	.16	29.0	12.3	16.7	.2800	.0500	.0500	.000	4.32	1.61	.1500	0.75	123,250	Bed 3.	
April.....	20	21	v. sl.	0	.15	40.6	15.3	25.3	.1000	.0420	.0420	.000	4.38	3.12	.4000	0.75	46,000	No. not given.	
May.....	11	12	0	0	.16	37.1	11.4	25.7	.1400	.0460	.0460	.000	6.58	1.84	.0100	0.55	24,300	Bed 4.	
May.....	25	26	sl.	v. sl.	.41	34.9	7.2	27.7	.3400	.0600	.0600	.000	7.82	1.17	.0600	0.93	119,250	No. not given.	
June.....	8	9	sl.	sl.	.24	40.6	12.4	28.2	.5000	.0680	.0680	.000	8.56	1.95	.0800	0.78	111,200	Bed 4.	
June.....	22	23	sl.	v. sl.	br.	30.9	9.5	21.4	.6800	.1500	.1500	.000	5.58	0.51	.0180	1.84	407,500	Bed 4.	
July.....	13	14	sl.	v. sl.	.31	36.2	9.6	26.6	.1800	.0880	.0880	.000	9.04	1.09	.0080	0.91	479,750	Bed 1.	
Aug.....	3	4	dec.	v. sl.	.55	30.1	5.1	25.0	1.0000	.1360	.1360	.000	10.10	0.05	.1800	1.67	25,700	Bed 4.	
Aug.....	17	17	dec.	sl.	.60	26.1	6.9	19.2	1.3800	.1440	.1440	.000	6.98	0.21	.0140	1.45	Lost	Bed 4.	
Sept.....	14	14	dec.	sl.	.39	28.0	9.5	18.5	.3400	.1040	.1040	.000	6.02	0.60	.0600	1.05	17,186,400	Bed 3.	
Oct.....	5	6	dec.	v. sl.	.37	24.8	6.4	18.4	.4000	.1080	.1080	.000	5.30	0.64	.0440	1.19	551,800	Bed 3.	
Nov.....	9	9	sl.	sl.	.45	22.9	6.3	16.6	.6000	.1160	.1160	.000	5.38	0.64	.0200	1.25	113,900	Bed 3.	
Nov.....	23	24	dec.	sl.	.50	23.3	7.9	15.4	.7000	.1300	.1300	.000	4.78	0.76	.0300	1.33	625,600	Bed 3.	
Dec.....	14	14	sl.	v. sl.	.25	24.3	7.5	16.8	.2000	.0700	.0700	.000	4.70	0.85	.0300	0.83	277,400	.....	
Dec.....	28	29	v. sl.	0	.18	36.8	13.4	23.4	.8800	.0680	.0680	.000	5.00	2.43	.0400	0.59	188,200	Bed 2.	
Yearly av.	...	...	sl.	v. sl.	.30	28.8	8.7	20.1	.4640	.0469	.0469	.000	5.60	1.14	.0741	0.93	207,800	.....	

\*See also pages 48 and 49 of this report.

\*\*Out of average.



# METEOROLOGY.



## METEOROLOGY.

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It has been remarked in previous reports of the Board that the influence of the meteorological conditions of the atmosphere, as well as the floating matter suspended therein, are recognized and acknowledged by all pathologists as causes of disease; and the following tables are therefore introduced, as heretofore, for the purpose of comparing the large prevalence of certain diseases, at different monthly periods of the year, with the temperature, the atmospheric pressure, the relative humidity, prevailing direction and force of the wind, and other conditions of the atmosphere, and also the amount of cloud and rain-fall during each month of the year. All of the said diseases and monthly prevalence of the same may be found in the report upon the registration of deaths arranged by MONTHS, in Table VII of the Registration Report.

The first table is compiled from the monthly reports of the city engineer of Providence, and shows the mean, maximum, and minimum temperature of the different months, and the extremes and average daily range of the same, the rain-fall, and prevailing direction of the wind.

The second table will give a more comprehensive monthly summary of observations during 1903, including a large number of atmospheric conditions for each month, and also yearly summaries for each of the five preceding years. It is condensed from the annual summary of monthly observations at Hope reservoir and the city hall, in Providence. Similar data, for the years previous to those given in this report, will be found in the report for the year 1902, these figures commencing with year 1883.

TABLE 1.

*Temperature, Range of Temperature, Rain-fall, and Prevailing Direction of the Wind for each Month during the year 1903.*

(Providence.)

MONTHS.	TEMPERATURE.							Total Amount of Rain or Melted Snow in Inches.	Prevailing Direction of the Wind.
	Monthly Mean.	Maximum.	Minimum.	Monthly Range.	Greatest Daily Range.	Least Daily Range.	Average Daily Range.		
January.....	31.0	51.0	3.0	48.0	29.0	4.0	16.5	4.98*	N. W.
February.....	33.1	59.5	4.5	55.0	30.5	6.0	18.3	5.64*	N. W.
March.....	46.2	71.0	25.0	46.0	26.5	6.0	16.3	8.17*	N., S.
April.....	49.5	84.0	27.5	56.5	32.5	2.5	17.5	4.01*	N. W.
May.....	61.7	91.0	35.5	55.5	33.5	7.5	20.5	.58	S.
June.....	62.5	86.0	48.0	38.0	30.5	5.0	17.8	6.64	S.
July.....	73.5	96.5	55.5	41.0	28.5	6.5	17.5	4.75	N. W.
August.....	66.6	87.5	52.5	35.0	23.5	3.0	13.3	3.92	N. W.
September.....	64.4	90.0	42.5	47.5	25.5	8.5	17.0	1.00	S.
October.....	54.3	74.0	32.0	42.0	28.5	3.5	16.0	2.89	N.
November.....	39.9	71.0	16.0	55.0	21.0	6.5	13.7	1.77*	N. W.
December.....	29.6	54.5	4.5	50.0	31.0	5.5	18.3	3.56*	W.
For year.....	51.0	96.5	3.0	.....	.....	.....	.....	47.91	N. W.

\* Snow and rain.



TABLE II.—Summary of Meteorological Observations at Hope Reservoir and City Hall, Providence, for the Year 1903.

MONTHS.	BAROMETER, Reduced to Sea Level, and to 32°.				THERMOMETERS.				RELA- TIVE HUMID- ITY.	WIND.								WEATHER.				RAIN AND SNOW.					
	Reduced to Sea Level, and to 32°.				Thermometers.					WIND.								WEATHER.									
Mean.	Maximum.	Minimum.	Range.	Mean.	Maximum.	Minimum.	Range.	Mean.	North.	Northeast.	Southeast.	South.	Southwest.	West.	Northwest.	Variable.	Mean velocity.	Clear.	Fair.	Variable.	Rain or snow.	All others.	Mean amount of cloud.	Amount of rain or melted snow in inches.	Depth of snow in inches.		
January.....	29.87	30.59	29.09	1.50	31.	51.	3.	48.	69	4	0	0	1	3	4	6	13	....	8	6	13	1	10	1	4.8	4.98†	7.50
February.....	29.95	30.46	28.81	1.65	33.1	59.5	4.5	55.	70	3	0	0	4	3	2	4	12	....	10	8	8	0	12	0	4.3	5.64†	16.00
March.....	30.19	30.65	29.40	1.25	46.2	71.	25.	46.	75	8	5	1	2	8	2	2	3	....	7	7	7	1	16	0	5.4	8.17†	*
April.....	29.85	30.47	29.38	1.09	49.5	84.	27.5	56.5	64	8	3	1	0	8	0	1	9	....	9	6	9	3	10	2	4.3	4.01†	*
May.....	30.12	30.51	29.67	.84	61.7	91.	35.5	55.5	66	9	0	2	1	13	1	1	4	....	6	15	8	0	8	0	3.3	.58	....
June.....	29.94	30.36	29.51	.88	62.5	86.	48.	38.	79	5	4	3	3	12	0	2	1	....	6	2	4	1	19	4	7.2	6.64	....
July.....	29.87	30.16	29.49	.67	73.5	96.5	55.5	41.	68	3	1	0	1	5	4	4	13	....	6	3	14	0	14	0	4.4	4.75	....
August.....	29.99	30.40	29.62	.78	66.6	87.5	52.5	35.	73	8	1	2	3	5	1	1	10	....	5	0	17	0	13	1	5.8	3.92	....
September.....	30.10	30.40	29.62	.78	64.4	90.	42.5	47.5	73	6	0	0	0	9	5	2	8	....	6	6	15	2	7	0	3.4	1.00	....
October.....	29.98	30.37	29.31	1.06	54.3	74.	32.	42.	75	7	2	3	1	6	3	3	6	....	8	9	7	0	15	0	4.8	2.89	*
November.....	29.97	30.68	29.38	1.30	39.9	71.	16.	55.	67	5	0	1	0	1	4	2	17	....	7	13	8	0	9	0	3.6	1.77†	2.00
December.....	29.93	30.51	29.06	1.45	29.6	54.5	4.5	50.	72	5	0	0	0	2	5	10	9	....	9	12	4	2	13	0	4.0	3.56†	8.00
Means for the year.	29.98	.....	.....	1.10	51.	.....	.....	47.5	71	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.6	.....	.....
Totals for the year.	.....	30.68	28.81	1.87	.....	.....	.....	96.5	3.	93.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	87	114	10	146	8	.....	47.91	33.50
Extremes.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Yearly summaries from 1881 to 1899, inclusive, are given in previous reports. \*Too small to be measured. †Snow and rain. "Variable" direction of the wind has not been considered since 1901.



# YEARLY SUMMARY FOR 1899.

[illegible]

# YEARLY SUMMARY FOR 1898.

[illegible]

*Meteorological Observations for the Whole State for 1903.*

MONTHS.	TEMPERATURE (IN DEGREES FAHREHNEIT).						PRECIPITATION (IN INCHES).						SKY.			WIND.
	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snow-fall (un- melted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of the wind.
BLOCK ISLAND.																
January.....	31.4	+0.3	51	21	5	19	32	4.42	+0.22	1.25	3.6	10	13	8	10	W
February.....	33.0	+2.2	55	28	7	19	24	4.61	+0.25	1.55	5.8	10	13	5	10	N. W.
March.....	42.2	+7.4	56	14	22	2	20	8.03	+4.00	2.19	.....	13	11	5	15	S. W.
April.....	46.8	+3.4	72	29	28	5	29	5.61	+2.20	2.72	.....	10	14	8	8	S. W.
May.....	55.4	+3.0	81	19	38	2	23	0.86	-2.91	0.64	.....	6	16	12	3	S. W.
June.....	58.3	-3.7	75	3	46	1	22	4.82	+2.24	1.78	.....	15	4	9	17	S. E.
July.....	68.4	0.0	86	9	55	28	20	1.90	-1.27	0.49	.....	10	15	13	3	S. W.
August.....	65.0	-3.0	78	23	55	8	16	4.33	+0.87	1.50	.....	14	10	10	11	S. W.
September.....	63.0	-0.6	79	11	47	29	21	1.15	-1.76	0.57	.....	4	12	18	0	S. W.
October.....	55.7	+2.1	72	2	35	27	20	2.66	-1.77	0.92	.....	12	12	10	9	S. W.
November.....	42.0	-2.9	67	4	22	27	22	2.77	-1.43	1.13	3.6	11	16	5	9	N. W.
December.....	32.4	-3.8	54	13	8	26	29	2.45	-1.22	0.80	1.9	12	11	9	11	W.
Means.....	49.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	.....	.....	.....	.....	.....	.....	.....	43.61	.....	.....	14.9	127	147	112	106	.....
Extremes.....	.....	.....	86	.....	5	.....	32	.....	.....	2.72	.....	.....	.....	.....	.....	S. W.

## BRISTOL. §

January.....	31.6	+2.6	48	21	3	19	26	4.75	+0.34	1.42	6.0	9	15	16	10	W.
February.....	31.8	+2.1	51	28	7	19	25	5.38	+1.44	1.20	14.2	10	17	3	8	W.
March.....	43.4	+8.1	57	†23	24	2	20	6.90	+2.47	2.35	.....	11	15	.....	16	N. E.
April.....	47.2	+2.1	79	29	27	†5	33	4.43	+1.14	3.05	.....	9	21	.....	9	S. W.
May.....	57.8	+2.2	81	22	33	2	23	1.69	-2.13	0.68	.....	7	20	5	6	S. W.
June.....	60.0	-4.8	80	3	46	1	23	6.08	+3.68	2.00	.....	15	6	5	19	N. E.
July.....	70.4	+0.6	87	9	56	28	20	2.08	-1.05	0.65	.....	8	.....	.....	.....	.....
August.....	66.0	-3.3	80	23	52	8	19	3.62	-0.16	1.75	.....	11	.....	.....	.....	.....
September.....	62.8	-0.9	79	11	45	25	22	0.84	-2.71	0.33	.....	5	.....	.....	.....	S. W.
October.....	54.4	+2.1	70	2	32	28	24	2.91	-1.35	1.00	T	12	.....	.....	.....	.....
November.....	40.2	-3.6	65	4	16	27	18	1.98	-1.99	.....	2.0	8	19	3	8	N. W.
December.....	29.5	-4.1	50	†13	6	27	27	3.98	+0.67	1.03	8.0	10	10	6	6	W.
Means.....	49.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	.....	.....	.....	.....	.....	.....	.....	44.54	.....	.....	30.2	115	123	28	82	.....
Extremes.....	.....	.....	87	.....	3	.....	34	.....	.....	3.05	.....	.....	.....	.....	.....	S. W.

## KINGSTON. §

January.....	27.6	-0.1	52	2	-2	19	37	5.50	+0.40	1.73	7.0	8	10	10	11	W.
February.....	29.8	+1.9	54	†13	-4	†18	29	7.04	+1.74	1.60	12.0	9	14	5	9	W.
March.....	42.6	+8.3	68	14	16	2	36	9.19	+3.68	1.83	.....	11	10	6	15	S. W.
April.....	46.1	+1.3	83	29	23	6	37	6.91	+2.68	2.50	.....	7	12	11	7	S.
May.....	57.4	+2.4	90	20	29	2	34	0.70	-3.87	0.50	.....	5	20	5	6	N. E.

*Meteorological Observations for the Whole State for 1903.*

(CONTINUED.)

MONTHS.	TEMPERATURE (IN DEGREES FAHRENHEIT).						PRECIPITATION (IN INCHES).						SKY.			WIND.
	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snow-fall (un-melted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of the wind.
KINGSTON.—Concluded.																
June..	58.4	-6.1	82	3	42	1	36	6.55	+3.92	1.77	.....	11	7	5	18	E.
July ..	69.2	0.0	93	10	48	16	27	3.59	-0.17	1.31	.....	11	13	14	4	W.
August.....	64.1	-4.5	85	23	45	8	28	6.55	+2.45	2.68	.....	12	9	10	12	S. W.
September.....	61.8	-0.6	88	14	34	30	35	0.75	-3.11	0.35	.....	3	17	7	7	W.
October.....	52.2	+1.4	74	†2	24	28	35	3.05	-2.46	1.18	T	10	12	7	12	N. E.
November.....	38.0	-3.1	73	4	9	26	30	2.50	-2.58	1.03	4.0	6	19	3	8	W.
December.....	25.6	-6.1	52	13	-3	27	31	3.77	+0.04	1.27	9.0	10	16	8	7	W.
Means.....	47.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	.....	.....	.....	.....	.....	.....	.....	56.10	.....	.....	32.0	103	159	91	115	.....
Extremes.....	.....	.....	93	.....	-4	.....	37	.....	.....	2.68	.....	.....	.....	.....	.....	W.



## MELVILLE.

January.....	28.7	.....	51	2	0	19	30	4.16	.....	1.30	6.0	9	14	9	8	W.
February.....	30.4	.....	61	28	—2	18	31	4.65	.....	1.24	5.5	11	16	5	7	W.
March.....	43.6	.....	68	14	18	2	32	7.60	.....	1.80	.....	10	14	5	12	S. W.
April.....	47.2	.....	81	29	25	5	30	4.79	.....	1.32	.....	9	17	5	8	S. W.
May.....	58.5	.....	92	19	30	2	38	1.41	.....	0.50	.....	5	17	13	1	N. E.
June.....	60.7	.....	87	3	40	1	37	8.80	.....	1.46	.....	13	6	10	14	S. E.
July.....	70.6	.....	95	9	51	28	28	2.93	.....	0.70	.....	11	17	9	5	S. W.
August.....	65.5	.....	85	23	49	8	30	3.21	.....	1.32	.....	12	15	5	11	N. W.
September.....	65.1	.....	90	14	39	30	31	0.99	.....	0.47	.....	5	21	7	2	S. W.
October.....	54.6	.....	75	12	27	29	33	2.77	.....	0.70	.....	10	13	8	10	N. W.
November.....	40.2	.....	74	4	11	26	29	2.09	.....	0.84	2.0	6	18	6	6	N. W.
December.....	28.2	.....	53	21	1	27	30	2.81	.....	0.80	4.0	9	18	2	11	N. W.
Means.....	49.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	.....	.....	.....	.....	.....	.....	.....	46.21	.....	.....	17.5	110	186	84	95	N. W. S. W.
Extremes.....	.....	.....	95	.....	—2	.....	38	.....	.....	1.80	.....	.....	.....	.....	.....	.....

## NARRAGANSETT PIER. 3

January.....	29.6	+0.7	50	12	1	19	35	4.27	—0.74	1.15	14.5	9	13	7	11	W.
February.....	31.3	+2.3	56	28	—2	18	35	5.19	+0.62	1.10	9.5	10	17	2	9	N. W.
March.....	42.2	+7.8	61	14	19	2	30	8.95	+4.37	2.25	.....	12	13	4	14	N.
April.....	46.2	+1.5	84	29	26	15	44	6.05	+2.52	1.80	.....	9	15	6	9	N. W.
May.....	56.0	+1.0	85	22	32	2	29	0.80	—3.45	0.55	.....	4	21	6	4	S. E.

*Meteorological Observations for the Whole State for 1903.*

(CONCLUDED.)

MONTHS.	TEMPERATURE (IN DEGREES FAHRENHEIT).						PRECIPITATION (IN INCHES).						SKY.			WIND.
	Mean.	Departure from the normal.	Highest.	Date.	Lowest	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snow-fall (un-melted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of the wind.
NARRAGANSETT PIER,—Concluded.																
June.....	57.8	—6.6	77	27	40	3	28	6.22	+3.91	1.05	.....	15	8	2	20	N. E.
July.....	69.3	—0.6	94	8	49	28	30	2.29	—1.03	0.85	.....	10	20	5	6	S. W.
August.....	64.0	—4.9	81	23	42	8	25	4.55	+0.50	1.32	.....	14	16	3	12	S. W.
September.....	61.6	—1.1	85	11	36	†29	28	0.84	—2.42	0.40	.....	4	17	4	9	S.
October.....	53.2	+1.0	73	†2	24	29	27	2.41	—2.13	0.10	T	10	16	4	11	N. W.
November.....	39.4	—3.7	71	4	12	26	26	2.31	—2.05	1.05	3.0	9	19	0	11	N. W.
December.....	28.0	—5.5	57	20	1	27	48	3.56	+0.04	1.20	5.0	10	17	4	10	W.
Means.....	48.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	.....	.....	.....	.....	.....	.....	.....	47.44	.....	.....	32.0	116	192	47	126	.....
Extremes.....	.....	.....	94	.....	—2	.....	48	.....	.....	2.25	.....	.....	.....	.....	.....	N. W.

## PROVIDENCE. §

January...	30.3	+2.2	51	21	3	19	29	4.98	+0.87	1.68	7.5	7	.....
February.....	32.8	+3.7	60	28	4	18	31	5.61	+1.80	1.07	16.0	9	.....
March.....	47.0	+11.9	71	20	25	†1	27	8.17	+4.06	1.24	T	12	.....
April.....	48.5	+1.5	84	29	27	5	33	4.01	+0.37	.....	T	8	.....
May.....	62.8	+4.6	91	20	35	2	35	0.58	-3.17	0.28	.....	3	.....
June.....	61.6	-6.6	86	3	48	†1	31	6.64	+3.44	1.13	.....	15	.....
July.....	74.6	+1.6	97	10	55	28	25	4.75	+1.52	2.07	.....	11	.....
August.....	67.4	-3.4	88	23	52	8	24	3.92	-0.24	.....	.....	12	.....
September.....	65.4	+1.6	90	14	42	30	26	1.00	-2.24	0.70	.....	5	.....
October.....	54.6	+2.4	74	†1	32	†28	29	2.89	-0.85	1.19	T	8	.....
November.....	40.0	-2.6	71	4	16	27	21	1.77	-2.42	.....	2.0	8	.....
December.....	29.6	-3.6	55	13	5	26	31	3.56	-0.27	1.36	8.0	8	.....
Means..	51.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals..	.....	.....	.....	.....	.....	.....	.....	47.91	.....	.....	33.5	106	.....
Extremes.....	.....	.....	97	.....	3	.....	35	.....	.....	2.07	.....	.....	N. W.

## AVERAGES, ETC., FOR 1903.

Block Island.....	49.5	.....	86	.....	5	.....	32	43.61	.....	2.72	14.9	127	147	112	106	S. W.
Bristol.....	49.6	.....	87	.....	3	.....	34	44.54	.....	3.05	30.2	115	123	28	82	S. W.
Kingston.....	47.7	.....	93	.....	-4	.....	37	56.10	.....	2.68	32.0	103	156	91	115	W.
Melville.....	49.4	.....	95	.....	-2	.....	38	46.21	.....	1.80	17.5	110	186	84	95	N. W.
Narragansett Pier.....	48.2	.....	94	.....	-2	.....	48	47.44	.....	2.25	32.0	116	192	47	126	S. W.
Providence.....	51.2	.....	97	.....	3	.....	35	47.91	.....	2.07	33.5	106	87	114	164	N. W.

§ Thermometers not supplied by Weather Bureau.

† On other dates also.

T indicates Trace

All records are used in determining State or district means, but the mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation. Letter of alphabet following name of month indicates the number of days for which no record was kept.

All records are used in determining State or district means, but State and district departures are determined by comparison of current data of only such stations as have normals.

§Thermometers not supplied by Weather Bureau. †On other dates also. T indicates Trace.

## BIRTHS, DEATHS, AND MARRIAGES, 1903.

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The value of reliable reports, in their various bearings, relating to the records of births, marriages, and deaths, and the items of fact connected therewith, showing the vital movements of the population from year to year, has been so frequently presented in the previous reports of this Board as to need no repetition at this time. It is gratifying, however, to be able to state that, with no exception, persons eminent in social and political science everywhere recognize the indispensable information such reports furnish, and that in every civilized country they occupy places of importance in the government reports second to no other department.

The fiftieth report (1902) on registry of vital movements in Rhode Island was completed and issued by the end of the year, and will be found appended to this report.

The work of collecting the data for the fifty-first report (1903), the enumerating, classifying, arranging, and collecting in tables for the purpose of presenting the various facts in such detail as to facilitate examination and study, has been in progress during the time of making up this report, and affords some facts which may be presented at this time.

Below will be found some of the general results of the registry of births, marriages, and deaths during 1903.

### BIRTHS.

SEX.		PARENT NATIVITY.	
Males.....	5,975	Native*.....	4,709
Females.....	5,806	Foreign.....	7,072
Whole number of births.....		11,781	

---

\*Including all whose fathers were born in the United States, whether the fathers were of foreign or native parentage.

## MARRIAGES.

Native born Groom and Bride.....	2,009
Foreign born Groom and Bride.....	1,427
Native Groom and Foreign Bride.....	483
Foreign Groom and Native Bride.....	554
Whole number of marriages.....	4,473
Native Grooms.....	2,492
Foreign Grooms.....	1,981

## DEATHS.

SEX.		NATIVITY.	
Males.....	4,461	Native.....	6,148
Females.....	4,181	Foreign.....	2,494
Whole number of deaths.....		8,642	

There was one birth to every 39.6 of the population, or.....25.3 births in every 1,000  
 One person married in every 52.1 of the population, or 19.2 persons married in every 1,000  
 And one death in every 53.9 of the population, or.....18.5 deaths in every 1,000  
 Population in 1903 was.....466,210



*The following Summary will show the rates, per 1,000 of the population, of births, marriages, and deaths for seventeen years.*

	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Birth-rates.....	24.2	24.2	24.1	24.7	26.5	25.2	26.5	26.6	25.7	27.3	26.8	25.9	25.6	25.9	25.8	25.1	25.3
Death-rates.....	19.9	20.4	19.0	20.1	18.6	20.1	19.6	19.5	19.6	19.1	17.6	16.7	17.6	20.6	18.2	17.8	18.5
Excess of birth-rates over death-rates....	4.2	3.8	5.1	4.6	7.9	5.1	6.9	7.1	6.1	8.2	9.2	9.2	8.0	5.3	7.6	7.3	6.8
Marriage-rates.....	18.0	18.7	18.4	18.5	18.7	19.1	18.7	17.4	18.2	17.0	15.6	15.8	16.2	18.4	17.6	18.5	19.2
Ratio of number of marriages.....	9.0	9.3	9.2	9.3	9.3	9.6	9.4	8.7	9.1	8.5	7.8	7.9	8.1	9.2	8.8	9.3	9.6

The following table will present the number, parentage, and proportion to total mortality of deaths from several of the most prominent causes of death, in their order of precedence:

	Whole No. of deaths.	Percentage of deaths from all causes.	Parentage.		Excess of Foreign over Native.
			Native.	Foreign.	
Tuberculous Diseases.....	1,028	11.90	323	705	382
Pneumonia.....	870	10.07	301	569	268
Heart Diseases.....	726	8.40	313	413	100
Cholera Infantum.....	638	7.38	209	429	220
Kidney Diseases.....	617	7.14	271	346	75
Apoplexy and Paralysis.....	394	4.56	204	190	—14
Accidents.....	376	4.35	135	241	106
Cancer.....	350	4.05	153	197	44
Bronchitis.....	265	3.07	79	186	107
Old Age.....	231	2.67	131	100	—31
Brain Diseases.....	204	2.36	74	130	36
Diphtheria.....	189	2.19	73	116	43
Whooping Cough.....	164	1.90	79	85	6
Influenza.....	142	1.65	68	74	6
Enteritis.....	139	1.61	51	88	37
Measles.....	133	1.54	41	92	51
Liver Diseases.....	120	1.39	37	83	46
Dysentery.....	96	1.11	38	58	20
Typhoid Fever.....	86	1.00	27	59	32
Diabetes.....	75	0.87	40	35	—5
Appendicitis.....	63	0.73	30	33	3
Scarlet Fever.....	60	0.69	23	37	14

#### LONGEVITY OF DECEDENTS.

	1903.	1902.	1901.	1900.	1899.
Average age in years of Male decedents.....	32.94	34.32	35.01	31.81	34.04
Female " .....	35.96	36.70	38.07	35.58	37.30
Total " .....	34.40	35.49	36.51	33.67	35.67

There has been a gradual increase during the last forty-three years in the average length of life of decedents; taking periods of five years each, and census periods, the figures increase from twenty-nine and thirty-two one-hundredths years, for the period from 1861-1865, to thirty-four and fifty-three one-hundredths years for the period from 1896-1900.

## RATIOS OF MORTALITY.

There has been the usual variation in the amount of mortality from the more important diseases. Cancer, however, as a cause, increases. The surgeon has greater opportunities for determining that a particular tumor is of a distinctive type, and the physician has been furnished with many new diagnostic possibilities. While a gradual decrease from consumption should be looked for, yet the figures hold about the same; and while there is a constant actual decline in the number of deaths from tuberculosis, yet many diseases which were reported as from some other cause were tuberculous. The awakening to the prevalence of this disease has now led to a more correct diagnosis. A considerable increase in the number of deaths from influenza occurred as the result of an increased prevalence of that disease during the year, there being 105 more deaths than in 1902.

Diseases of the heart are often associated with disease of the kidneys, and the physician signing the death return may give prominence to one of these as a primary cause since this may be uppermost in his mind. It may be at times that the presence of disease of the kidneys, as shown by the physical signs, may be more readily ascertained than pathological changes in an examination of the heart. Often both causes are given, and as statisticians have not agreed upon a selection of either as of the major importance, the compiler may unwittingly lean to a preference. During 1903 there were 617 deaths from disease of the kidneys, but it must be remembered that during the year the wide-spreading of influenza, attacking almost every individual in some form, must necessarily have reduced the vitality of those already suffering from chronic diseases of all forms.

The same may be said of pneumonia, the invasion of the micro-organisms producing influenza into the lungs in many cases may have caused inflammatory symptoms which were not distinguishable from a "congestive pneumonia." This may in part account for the 870 deaths from pneumonia as against 715 in the year previous, making the largest number ever recorded in the State.

Scarlet fever, as it does at certain periodical intervals, asserted itself in an increased spread and with increased severity. This year there were twice as many deaths from scarlet fever as during the previous year. The last period of high mortality from this disease occurred in the years 1893-1895.

Small pox, which had spread throughout the State in 1902, causing 35 deaths, has somewhat abated in the actual number of cases and the number of deaths had fallen to only 3 in 1903.

The following figures and references give a more detailed comparison of the presence of these several diseases:

**APOPLEXY AND CEREBRAL HEMORRHAGE.**—There were 82 less deaths from apoplexy in 1903 than in 1902. The number of deaths, however, from these causes has been steadily increasing for the past thirty-eight years.

**BRONCHITIS.**—There was an increase of only six over the number of deaths from bronchitis in 1902. (See Reg. Rep. for 1903.)

**CANCER.**—The deaths from cancer in 1903 numbered 350 as against 341 in 1902, and 306 in 1901. Cancer has increased considerably in its proportion of mortality to whole number of causes of death, during the last twenty-five years, and is probably due to increased facilities in diagnosis.

**CHOLERA INFANTUM.**—There were 638 deaths from cholera infantum in 1903, which was 27 more than the number in 1902. The proportion to whole number of deaths was 7.38 per cent.; in 1902, the proportion to whole number of deaths was 7.68 per cent.

**CONSUMPTION.**—There were 1,028 deaths from tuberculous diseases in 1903. These include 840 from pulmonary tuberculosis, 49 from general tuberculosis, 35 from abdominal tuberculosis, 79 from tuberculous meningitis, 9 from laryngeal tuberculosis, and 16 from tuberculosis of other organs. (See Reg. Rep. for 1903.)

DIPHTHERIA.—This disease had a mortality of 189 in 1903, which number was 41 more than in 1902; 150 of these deaths were in Providence county, 82 being in Providence city. The percentage to the whole number of deaths was 2.19.

FEVER, TYPHOID.—There were but 86 deaths from typhoid fever in 1903 as against 91 in 1902, and 103 in 1901. Typhoid fever, as a disease and a cause of death, has gradually lessened in both proportions, as compared with other important diseases, during the last 20 years.

HEART, DISEASES OF.—The deaths from diseases of the heart in 1903 numbered 726, against 704 in 1902. Diseases of this organ have been gradually increasing in the last thirty-eight years. See Table LXXVIII, page 229, Reg. Rep. (1903).

INFLUENZA.—The number of deaths reported from this disease in 1903 was 142, an increase of 105 over 1902.

KIDNEYS, DISEASE OF.—The number of deaths from diseases of the kidneys in 1903 was 617, the largest number ever recorded in this State. Kidney disease has been gradually assuming large importance as a cause of death during the last thirty-eight years. The ratio of mortality for the five years 1899–1903 was more than seven times as large as the ratio of the years 1866–1870. See Table LXXXI, page 238, of Reg. Rep. (1903).

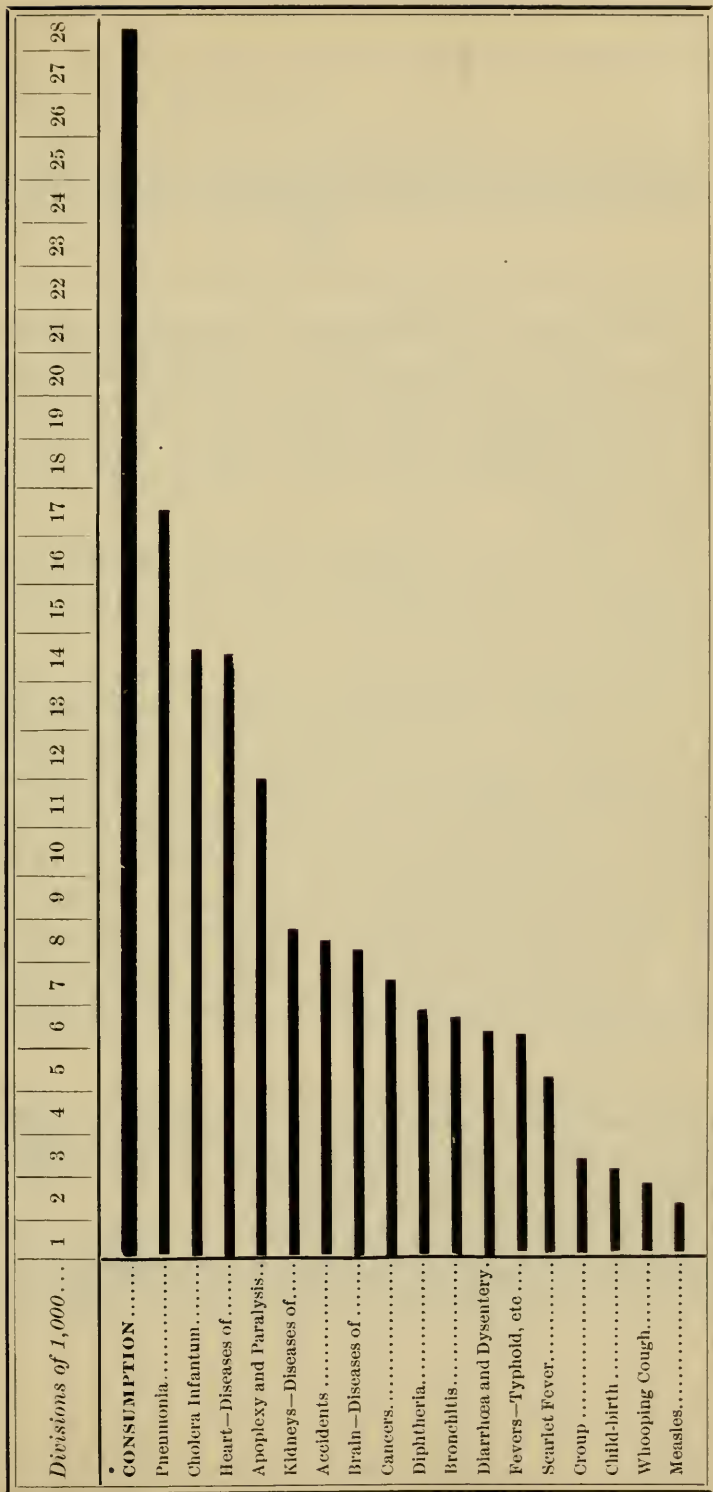
PNEUMONIA.—The number of deaths caused by pneumonia in 1903 was 870 against 715 in 1902, and is the largest number ever recorded in this State. See Reg. Rep., 1903, Table LXXXVI, page 248.

SCARLET FEVER.—There were 60 deaths recorded in 1903, from scarlet fever. This was double the number in 1902. Scarlet fever has, however, largely decreased in epidemic prevalence and proportion of mortality during the last fifteen years, as compared with previous periods of fifteen years each.

SMALLPOX.—Three deaths from smallpox were recorded in 1903. In 1902 there were 35 deaths from this disease; 5 deaths occurred in 1901, and 1 in 1900; for five years previous to 1900 there were no deaths from smallpox in this State.



*Diagram exhibiting the comparative mortality by absolute number of deaths from eighteen principal causes of death in Rhode Island for thirty-eight years, 1866-1903.*



## REPORT OF CONTAGIOUS DISEASES DURING THE YEAR 1903.

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For the purpose of ascertaining the comparative prevalence of the more common communicable diseases, the health officers of the several towns are requested to report monthly to the State Board of Health all cases of diphtheria, scarlet fever, typhoid fever, measles, and other communicable diseases which may have occurred during the month previous.

The health officers are supplied with return addressed postals for this purpose, and the postals are forwarded to them each month as a reminder.

Many of them report regularly. Others do not report, as they have no record of cases. The physicians in many towns, although aware of the existence of ordinances requiring the reporting of contagious and infectious diseases, do not report the cases occurring in their practice. This is because, in the first place, they have so few cases that they postpone the report until it is already known to the town people and to the health officer by town rumor. In some cases the physicians object to reporting to a health officer who is not a physician. In several towns the health officer is merely a nuisance inspector and may be engaged in the occupation of a grocer, plumber, or undertaker.

As no result or benefit will accrue from reporting the case under these conditions, it appears useless to the doctor to report. No inspection will be made, no placard placed, no instructions or precautions will be given by the health officer.

In fact, the physician, in the presence of an epidemic, is more apt to report to the secretary of the State Board of Health. If advised to report to the local health officer, that he may immediately com-

pare these cases with others reported, the question is asked if there is any health officer and who he is.

Some physicians object to having a mechanic or an undertaker call upon the family in connection with his case, as he does not believe that any additional sanitary directions can be given than those which he has already given to the family.

However, as the proportion of cases reported and those neglected are about the same each year, those reported serve as a comparison with the different years.

By observation of the following tables it will be noted that in 1903 there were 918 cases of diphtheria, which was 354 more than the number reported during the previous year, which was 564. The average for the previous nine years was 623. This will make the number for 1903, 295 more than the average.

In 1903 there were reported 760 cases of scarlet fever, 210 more than in 1902 and 46 more than the average for the previous nine years.

Typhoid fever prevailed to the number of 304 cases, which was 63 less than the number reported in the previous year and 55 less than the average for the previous nine years.

During the year 1903 there were reported or discovered about 60 cases of small-pox in the different parts of the State, and many other cases must have passed through the several stages of the disease without discovery. Of this number there were but three deaths.

A detailed description of the appearance of the cases and of the attempt at control will be found in another part of this report.

The prevalence of these diseases during one year more than another does not give the significance that would appear at first sight.

It permits of comparison of the number of cases with other prevailing conditions, such as season, climatic conditions, etc. By such comparison it permits of the deduction that the spread of the disease is dependent upon local conditions or association of individuals; thus the difference in season may be varied only because individuals are more closely brought in contact with each other, as the schools

are open during winter months only. In the summer months the individual is prone to travel, and through coming in contact with the dejections of many individuals at country farms and watering places, through transmission by flies and other insects, or by contaminated drinking-water, become infected with typhoid fever.

All the figures in this connection go to emphasize the fact that prevalence of these diseases means individual and direct contact of the person with the disease in another, sometimes a milder, form, or with the excreta or secretions from an original case.

The deductions made in the report of the superintendent of health of the city of Providence, give a precise study of the influence of these conditions.

## DIPHThERIA FOR 1903.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For Year.
Barrington.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Bristol.....	7	1	1	1	0	0	0	0	0	0	1	1	12
Warren.....	0	1	...	...	0	1	0	2	0	0	0	0	4
Coventry.....	0	1	0	0	0	0	0	0	0	0	2	2	5
East Greenwich.....	0	0	0	0	0	0	0	0	0	0	0	1	1
West Greenwich*.....	2	0	0	...	0	0	0	1	0	0	...	3	6
Warwick.....	2	0	0	...	0	0	0	1	0	0	...	3	6
Jamestown.....	0	0	0	...	...	...	...	...	...	...	...	...	...
Little Compton.....	0	0	0	...	...	...	...	...	...	...	...	...	...
Middletown.....	0	0	0	1	1	0	1	0	0	0	0	0	3
Newport.....	15	13	15	10	11	8	10	7	10	11	10	9	129
New Shoreham.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Portsmouth.....	1	0	0	...	...	...	...	...	...	0	0	0	1
Tiverton.....	2	2	0	0	0	0	0	0	0	0	0	0	4
Burrillville.....	1	1	0	2	...	...	...	1	1	13	2	6	25
Central Falls.....	1	1	0	0	0	2	0	0	1	0	3	1	9
Cranston.....	0	0	1	2	0	0	2	1	1	2	1	3	13
Cumberland.....	2	0	0	0	0	0	1	0	...	...	...	0	3
East Providence.....	2	2	3	2	1	2	3	4	3	8	7	10	47
Foster.....	0	0	0	0	0	0	0	0	0	0	0	1	1
Glocester.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Johnston.....	0	1	0	0	0	0	0	0	2	2	2	6	13
Lincoln.....	0	0	...	...	...	...	...	...	...	0	3	...	3
North Providence.....	0	3	0	0	1	0	1	0	0	1	0	0	6
North Smithfield.....	0	0	0	0	...	...	...	0	0	0	0	1	2
Pawtucket.....	4	2	1	1	5	6	2	1	4	10	17	14	67
Providence.....	32	16	28	18	37	37	38	38	40	52	72	57	465
Scituate.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Smithfield.....	0	0	0	0	0	0	0	0	1	0	0	0	1
Woonsocket.....	1	2	5	8	8	0	2	4	7	11	12	13	73
Charlestown.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Exeter*.....	0	1	0	0	0	...	1	...	0	...	...	0	2
Hopkinton.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Narragansett.....	0	0	0	0	0	0	0	0	0	0	0	0	0
North Kingstown.....	0	...	0	0	0	0	0	0	0	0	0	0	0
Richmond.....	0	0	0	0	0	0	0	0	0	0	...	0	0
South Kingstown.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Westerly.....	6	2	2	0	0	1	3	1	2	2	3	...	22
Total.....	75	48	56	45	64	57	64	60	72	112	136	129	918
Total, 1902.....	53	49	50	35	40	19	20	29	45	50	108	66	564
" 1901.....	71	55	81	31	43	61	19	23	23	77	121	69	674
" 1900.....	56	32	29	28	23	30	26	21	30	53	78	100	506
" 1899.....	18	23	22	11	19	25	16	14	23	35	41	51	298
" 1898.....	54	46	31	30	28	19	13	6	12	34	39	31	343
" 1897.....	103	47	67	59	61	48	38	59	77	147	117	70	893
" 1896.....	117	76	74	108	70	49	53	45	69	121	114	125	1,021
" 1895.....	62	33	31	26	50	35	55	52	100	137	227	164	972
" 1894.....	35	17	31	22	41	32	7	10	23	33	32	58	341

\* Has no health officer.

## SCARLET FEVER FOR 1903.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For Year.
Barrington.....	0	0	0	0	3	3	2	4	0	0	0	0	12
Bristol.....	4	3	5	4	0	0	0	0	0	2	0	13	31
Warren.....	2	1			4	4	2	0	0	1	0	5	19
Coventry.....	1	1	1	2	2	3	3	4	2	1	0	1	21
East Greenwich.....	0	0	0	0	0	0	0	0	0	0	0	1	1
West Greenwich*.....													
Warwick.....	0	3	6		0	3	0	2	0	1		3	18
Jamestown.....													
Little Compton.....													
Middletown.....	0	0	0	0	0	1	2	0	0	0	0	0	3
Newport.....	7	9	3	4	2	5	1	0	4	1	0	2	38
New Shoreham.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Porismouth.....	0	0								0	0	0	0
Tiverton.....	0	0	2	2	0	0	4	1	0	1	0	0	10
Burrillville.....				0				0	0	0	0	0	0
Central Falls.....	9	3	4	3	11	4	2	4	4	5	0	2	51
Cranston.....	3	2	2	0	4	1	0	0	3	1	2	12	30
Cumberland.....	2	0	0	1	0	0	0	0				0	3
East Providence.....	1	0	1	8	9	2	1	1	0	7	4	3	37
Foster.....	0	0	0	0	0	1	0	0	0	0	0	0	1
Glocester.....	0	0	0	0	0	0	0	0	2	0	0	0	2
Johnston.....	1	2	1	1	2	0	0	0	0	0	0	0	7
Lincoln.....	1	2								2	0		5
North Providence.....	0	1	2	0	0	0	0	0	0	0	0	0	3
North Smithfield.....	4	0	0	0			0	0	0	0	0	4	8
Pawtucket.....	6	1	1	4	4	9	0	2	1	1	3	11	43
Providence.....	8	17	28	18	41	27	27	22	22	30	51	44	335
Scituate.....	0	0	0	2	2	2	3	2	0	1	0	0	12
Smithfield.....	0	0	0	0	0	0	0	1	2	0	0		3
Woonsocket.....	2	2	2	5	4	2	7	0	0	1	0	0	25
Charlestown.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Exeter*.....													
Hopkinton.....	0	0	0	1	0	0			0			0	1
Narragansett.....	0	0	0	0	0	0	0	0	1	0	0	0	1
North Kingstown.....	2		0	1	0	1	2	0	0	0	0	1	7
Richmond.....	2	0	0	0	0	0	0	0	0	0		0	2
South Kingstown.....	2	1	0	1	0	0	1	0	0	0	0	1	6
Westerly.....	2	1	2	0	0	0	4	8	1	3	4		25
Total.....	59	49	60	57	88	68	61	51	42	58	64	103	760
Total, 1902.....	68	42	72	68	79	33	12	30	18	46	32	50	550
" 1901.....	59	48	59	59	52	54	29	26	35	94	76	66	657
" 1900.....	88	55	68	119	54	53	20	20	22	49	76	58	682
" 1899.....	33	46	48	20	43	30	25	23	65	68	91	15	607
" 1898.....	66	57	47	40	58	48	15	25	26	79	66	45	572
" 1897.....	80	47	47	51	34	57	41	35	42	77	53	63	629
" 1896.....	78	97	61	72	48	30	29	28	33	46	92	87	701
" 1895.....	168	132	118	123	69	78	56	47	55	63	87	91	1,087
" 1894.....	133	95	91	70	71	53	33	33	58	77	103	122	939

\* Has no health officer.



## TYPHOID FEVER FOR 1903.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For Year.
Barrington.....		0	0	0	0	0	0	0	0	0	0	0	0
Bristol.....	0	0	2	1	0	0	0	0	0	2	1	1	7
Warren.....	0	0			1	0	0	0	0	0	0	0	1
Coventry.....	0	0	0	0	0	0	0	0	1	2	0	0	3
East Greenwich.....	0	0	0	0	0	0	1	0	0	0	0	0	1
West Greenwich*.....													
Warwick.....	0	0	0			0	0	0	0	7		0	7
Jamestown.....													
Little Compton.....													
Middletown.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Newport.....	8	3	5	2	2	0	4	4	6	6	3	0	43
New Shoreham.....	0	0	0	0	0	0	0	0	0	0	1	0	1
Portsmouth.....	0	0								0	0	0	0
Tiverton.....	0	0	0	0	1	0	1	3	3	1	0	0	9
Burrillville.....				0				0	0	0	0	0	0
Central Falls.....	3	0	0	0	0	1	0	0	0	1	2	0	7
Cranston.....	0	0	0	0	0	0	1	0	1	3	1	4	10
Cumberland.....	0	0	0	0	0	0	1	0				3	4
East Providence.....	1	1	0	0	0	2	0	1	1	0	1	1	8
Foster.....	0	0	0	0	0	0	0	1	0	0	0	0	1
Glocester.....	1		0	0	0	0	0	0	0	0	0	0	1
Johnston.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln.....	0	0								0	0		0
North Providence.....	0	1	0	0	0	0	0	0	0	0	0	0	1
North Smithfield.....	0	0	0	0			0	0	0	0	0	0	0
Pawtucket.....	2	0	0	2	1	1	1	1	3	2	4	6	23
Providence.....	4	1	8	10	14	6	10	18	13	24	23	18	149
Scituate.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Smithfield.....	0	0	0	0	0	0	0	0	0	0	0		0
Woonsocket.....	0	0	0	0	0	0	0	1	0	0	0	0	1
Charlestown.....	1	0	0	0	0	0	0	0	0	0	0	0	1
Exeter*.....													
Hopkinton.....	0	0	0	0	0		0		1			0	1
Narragansett.....	0	0	0	0	0	0	0	0	0	0	0	0	0
North Kingstown.....	2		2	3	0	2	1	0	0	0	0	0	10
Richmond.....	0	0	0	0	0	0	0	0	0	0		0	0
South Kingstown.....	1	3	1	0	0	0	0	1	2	1	1	1	11
Westerly.....	0	0	0	0	0	1	0	3	0	0	0		4
Total.....	23	9	18	18	19	13	20	33	31	49	37	34	304
Total, 1902.....	11	4	23	9	15	17	25	36	51	60	74	42	367
" 1901.....	19	17	14	14	12	12	8	24	35	48	43	45	291
" 1900.....	12	7	11	6	10	16	9	27	71	171	83	52	475
" 1899.....	7	8	13	5	10	10	24	40	89	50	32	38	326
" 1898.....	20	20	33	18	10	6	8	16	28	39	25	28	251
" 1897.....	18	9	6	8	12	9	5	21	33	39	35	35	230
" 1896.....	33	17	21	14	9	13	19	46	65	31	31	26	325
" 1895.....	104	35	15	18	8	13	30	25	34	46	53	90	471
" 1894.....	61	27	54	23	25	14	13	54	59	76	55	31	492

\* Has no health officer.

## MEASLES FOR 1903.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For Year.
Barrington.....		0	0	0	1	0	0	0	0	0	1	4	12
Bristol.....	0	0	6	10	5	3	0	0	0	0	0	1	25
Warren.....	0	0			0	0	0	0	0	0	0	0	0
Coventry.....	2	0	0	0	3	2	0	2	0	0	0	0	9
East Greenwich.....	0	3	†	†100	†	0	0	0	0	0	0	0	103
West Greenwich*.....													
Warwick.....	0	0	0		0	1	0	0	0	0		0	1
Jamestown.....													
Little Compton.....													
Middletown.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Newport.....	1	0	0	0	0	0	0	0	0	0	0	0	1
New Shoreham.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Portsmouth.....	0	1								0	0	0	1
Tiverton.....	2	0	0	7	0	1	0	0	0	0	0	0	10
Burrillville.....				0				0	0	0	0	0	0
Central Falls.....	2	0	0		1	3	4		11	6	9	0	36
Cranston.....	2	0	8	10	10	5	0	0	0	0	0	0	35
Cumberland.....	0	0	0	0	0	0	1	0				0	1
East Providence.....	0	0	3	15	12	0	0	0	0	0	0	0	30
Foster.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Glocester.....	0		0	0	0	0	0	0	0	0	0	0	0
Johnston.....	0	10	4	3	18	24	0	0	0	0	0	2	61
Lincoln.....	0	0											0
North Providence.....	10	0	0	0	0	0	0	0	0	0	0	0	10
North Smithfield.....	0	0	0	0			0	0	0	0	0	0	6
Pawtucket.....	0	0	4	0	11	9	3	0	0	2	2	6	49
Providence.....	37	77	118	92	156	104	21	5	1	4	14		636
Scituate.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Smithfield.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Woonsocket.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Charlestown.....	0	0	2	0	0	21	15	0	0	0	0	0	38
Exeter*.....													
Hopkinton.....	1	6	3	3	4		0		1			1	19
Narragansett.....	0	0	0	0	0	0	0	0	0	0	0	0	0
North Kingstown.....	0		0	4	0	0	0	0	4	†	†	†	8
Richmond.....	0	4	3	4	12	22	0	0	0	0		0	45
South Kingstown.....	0	2	1	0	0	1	0	0	0	0	1	3	8
Westerly.....	0	0	0	0	0	0	0	0	0	0	0		0
Total.....	57	103	152	248	239	196	44	7	17	24	24	33	1,144
Total, 1902.....	100	72	20	18	9	13	3	3	15	79	38	30	400

\* Has no health officer.

† Estimated.

‡ Number of cases not ascertainable.

## TUBERCULOSIS.

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### EXAMINATIONS OF SPUTUM.

The examination of specimens of sputum expectorated by persons who are suspected of being afflicted with pulmonary tuberculosis has long been established as a routine method of assistance in making or confirming a diagnosis of the presence of that disease.

The Board introduced this means of assistance to physicians in their daily work in 1894.

It is understood by those who utilize the test that the finding of the organisms of tuberculosis is of positive value. Also that the absence of the tubercle bacillus in a given specimen of sputum does not signify that the disease tuberculosis is absent.

It can be readily understood that the person affected may have only a small lesion or that the sputum discharged may be saliva and not coughed up, that the secretions from the lungs may come from any portion of raw inflamed surface or that the organisms present may be held in a mass of thickened tissue, and do not happen to escape in this particular specimen at the time of coughing.

When a negative result is found the physician sends in a second specimen for examination if from the clinical symptoms he continues to believe that tuberculosis is present.

It is assumed that these examinations have a necessary place in the work of a board of health from the fact that, the disease being a communicable one, it is the duty of boards of health to ascertain the presence of all cases and by warning prevent those who have the disease from communicating it to others.

The average physician is not, and can not be, properly equipped with the paraphernalia to examine a case which may occur in his practice only occasionally. He has been fully instructed as to the

meaning of the presence or absence of the organism. In many of the schools instruction and actual laboratory practice is given in examining sputum for the organism, but it is impossible for him to carry the staining solutions necessary or to take the time for the examination.

The bacteriological laboratory of the State Board of Health, fully equipped with the necessary paraphernalia and with daily experience in examinations, is in a position to give a prompt report as to the result of an examination.

The examination is usually made within twenty-four hours of receiving the specimen, and is reported to the physician having the case in charge the following day.

A card catalogue record of these results is kept for reference for the department only.

The result of an examination is never given upon the request of any person except the physician sending in the specimen or by some person by him authorized to receive the report.

It is the purpose of the Board that these reports be protected securely from the curious friend or neighbor.

Likewise a report to the patient himself is refused on the ground that a misinterpretation of the result may follow to the detriment of the patient and danger to the public. If he receives the report that no tubercle bacilli were found, he may assume that the disease is absent and take no further precautions. If he has the report of a positive finding, he may at once assume a line of treatment with quack remedies; he may become despondent and refuse to seek aid of any kind. If he must ascertain the result from the physician whom he has consulted, an opportunity is offered at least, to give sound advice in the presence of the disease and in case of a negative result with suspicious clinical symptoms to advise and obtain a second examination of the sputum.

Spit-cups have been furnished free by this department to patients applying for the same, and a large number have availed themselves of this privilege.

In addition to the card catalogue maintained to record the results of examination of sputum, a similar catalogue of all the deaths which are the result of tuberculosis is preserved for reference.

The association of T. B. +, or the finding of tubercle bacilli in a specimen of sputum from a certain person, is followed perhaps in a few months or a year by the record of his death on a blue card.

The deaths have been thus recorded since 1894, and are a source of study to those interested in the subject.

Many cases will occur in sequence in the same family, frequently at the same address. Often several cases will occur in subsequent months or years at the same residence address, but with different names and different families. This permits of study as to whether the premises may be considered as infected, or whether the unsanitary surroundings of lack of fresh air and sunlight may be the causative factor, or whether the persons who are in reduced circumstances, lacking the necessities of life, may not have acquired the disease abroad and that these certain tenements may be the only refuge they may have.

It requires much patient investigation of many years' records and personal consideration of the cases to admit of satisfactory deductions, but a record of this kind will after several years be of service as a basis for such investigations.



*Results of Examinations of Sputum for Tuberculosis from January 1, 1903, to January 1, 1904.*

CLINICAL DIAGNOSIS.	Total.	T. B. present.	T. B. absent.	Past cases of T. B. in family.	At present, cases of T. B. in family.
Bronchitis.....	143	29	114	2	.....
Bronchitis, chronic.....	41	7	34	7	.....
Tuberculosis, pulmonary.....	430	257	173	91	7
No diagnosis given, susp. T. B.....	67	24	43	7	.....
Tuberculous laryngitis.....	12	7	5	5	.....
Pleurisy.....	11	5	6	4	.....
Pneumonia, unresolved.....	17	5	12	3	2
Asthma.....	1	1	.....	.....	.....
"Anemia".....	2	.....	2	.....	.....
"Cough".....	4	.....	4	.....	.....
After grippe.....	4	.....	4	.....	.....
Malaria.....	2	1	1	1	.....
After typhoid fever.....	2	.....	2	.....	.....
"Catarrh".....	2	.....	2	.....	.....
"General cirrhosis".....	1	1	.....	1	.....
<sup>1</sup> Total.....	739	337	402	121	9

Besides these there was an examination made of pus from a tuberculous gland with negative result.

During the year there were 739 specimens of sputum submitted for examination, with the supposition on the part of the attending physician that tuberculosis might be a factor in the causation of the symptoms of the patient.

Of these cases, in 430 the clinical symptoms present were sufficiently distinctive to lead the physicians to believe that tuberculosis of the *lungs* was present. In 257 of these cases the examination of the specimen of sputum showed the presence, in greater or lesser quantity, of tubercle bacilli. This would make 60 per cent. of cases where the clinical diagnosis coincided with the bacterial findings, while in 173 cases, or in 40 per cent., the bacilli of this disease were not found. While this negative result is of value, yet it does



not carry the weight of a distinct negative, as to the actual presence of the disease, for it is possible to obtain from the patient a specimen of sputum which is composed of only the saliva and secretions from the larynx, and containing none from the air passages in the lungs. The organisms may also be present at times, in the lung, either lying dormant or encapsulated, and will not be discharged into the air passages, and become a part of the sputum, until a degenerative process is set up which breaks down the tissues surrounding the organisms and sets them free.

In the 12 cases of tubercular laryngitis, 7 were positive. Of the 11 cases of pleurisy, 5 were positive. The application of this method of diagnosis is especially valuable in this form of the disease, inasmuch as the appearance of the larynx may indicate the presence of ulcerative processes, and the formation of tubercles from other causes.

It is of especial value in these cases, for the organism may not as yet have invaded the lung, but if the cases are neglected, they may readily be carried to the lung or intestine, and there propagate the disease.

It is of interest to note that, of 184 cases of chronic and acute bronchitis, in 36 cases the diagnosis was erroneous, and the presence of tuberculosis was established in the bronchi, if not, also, in the lungs. The constitution of the patient, however, being sufficiently strong, as yet, to prevent the invasion of the organisms into large areas, the symptoms present were not sufficiently distinct, or alarming, to warn the physician of the dangerous element which was present. In 9 instances, where the diagnosis of bronchitis was made, there had been other cases of the disease in the family.

### RECORDS OF DEATHS FROM TUBERCULOSIS.

In the table which follows it will be noted that there are other forms of tuberculosis than the common tuberculosis of the lungs (pulmonary tuberculosis), called "consumption."

Next to the pulmonary form the laryngeal form is the most dan-

gerous. These two forms are sometimes designated as "open tuberculosis," inasmuch as the secretions may be dislodged from the degenerating tissues and brought to the open air, and are disseminated in such a manner that they may reproduce the disease. Other forms of tuberculosis occur, such as bone tuberculosis, tuberculosis of the abdominal organs or of the brain, or a general disseminating infection of the whole system. Deaths occur from all of these forms of the disease.

The following table gives the number of cases of death from lung tuberculosis and also of all other forms of the disease, as recorded by this department:

*Deaths from Tuberculosis from 1890-1903.*

YEAR.	Pulmonary Tuberculosis.	Other Tuber- culosis.	All forms of Tuberculosis.
1890.....	852	130	982
1891.....	740	151	891
1892.....	759	156	915
1893.....	722	146	868
1894.....	705	154	859
1895.....	799	137	936
1896.....	846	143	989
1897.....	777	152	929
1898.....	765	140	905
1899.....	823	168	991
1900.....	850	165	1,015
1901.....	844	150	994
1902.....	791	147	938
1903.....	840	188	1,028
Total.....	11,113	2,127	13,240

## EXAMINATION OF CULTURES IN CASES OF SUSPECTED DIPHTHERIA.

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The examination of cultures from material swabbed from the throats of persons suspected of having diphtheria has been continued.

This practice was inaugurated in 1894, and Rhode Island was the first State to place this facility before the profession, following by a month or two its introduction by the city of New York.

This procedure enables the physician to verify his suspicion of the presence of diphtheria in the throat of his patient by showing the positive presence of the Klebs Loëffler bacillus, or, on the other hand, by the absence of that organism confirms his diagnosis of pharyngitis or tonsilitis.

In many instances a positive finding in the presence of clinical symptoms which are negative of diphtheria has enabled the physician to foresee and forestall by treatment the actual presence of diphtheria. The clinical symptoms may not have developed sufficiently to be diagnostic, and yet the presence of the characteristic bacillus enables the physician to be on his guard against any sudden depressing symptoms of the patient. It also places him on his guard against the spread of the disease to other members of the family. These persons may be more susceptible to the toxic influences of the organism than the patient, and may have the disease in a more virulent form.

By thus being forewarned the physician is prepared to meet the serious symptoms of the disease and to neutralize the action of the organism, or rather its toxic products, by the administration of anti-diphtheritic toxin or diphtheria antitoxin. This product has been supplied by the State Health Department free, to those unable to

pay for it, since its introduction to the profession. During 1903, 885 packages of 2,000 units each were given out by this department.

The State was early in its belief that the protection of the individual case of a communicable disease against other members of the community was justifiable. In thus utilizing the State's money it was believed that the public was protecting itself against the spread of the disease by checking it in the individual.

If the individual having the disease was unable to protect himself against others, it was proper that the State protect its taxpayers as it would in the isolation and sustenance of cases of small-pox.

As the State as a whole is protected in this way, the State assumes the expense of the protection.

While the expense of examination of the cultures from the throats examined and the expense of antitoxin is seemingly considerable, yet the protection afforded is far above the expenditure.

During the year 1903 there were 1,105 primary cultures examined for the presence of diphtheria. Of this number the Klebs Loëffler bacillus of diphtheria was found in 297 cases, 226 of these showing a pure, unmixed culture of Klebs Loëffler, and 71 a mixture with micrococci. The bacilli were absent in 808 cases.

The membrane in the suspected cases was located in the tonsils in 590 cases, on the pharynx in 17 cases. There were other cases already in the same family in 210 cases.

There were also examined 211 secondary culture which were largely those taken in connection with the question of quarantine release. Of these, 77 showed the presence of the Klebs Loëffler bacillus and 134 were negative.

*Diphtheria.*

CLINICAL DIAGNOSIS.	RESULTS.												LOCATION.						DURATION.				
	Total number primary cultures.	K. L. present.	K. L. pure.	K. L. Mic.	Total number K. L. absent.	Mic.	Mic. and strep.	Mic. and strep. bacilli.	Mic. bacilli.	Bacilli.	Contamination.	No growth.	Tonsils.	Pharynx.	Tonsils and pharynx.	Other parts of throat.	None seen.	None given.	Other cases in same family.	One day.	Few days.	One week.	Weeks.
Tonsillitis.....	273	53	40	13	220	184	11	...	3	6	5	11	207	....	1	7	36	22	29	85	181	5	2
Follicular tonsillitis.....	109	23	19	4	86	68	3	...	1	7	2	5	85	....	....	2	12	10	7	38	67	3	1
Diphtheria.....	324	165	130	35	159	114	17	....	5	7	7	9	233	10	18	30	15	18	55	101	193	25	5
Pharyngitis.....	40	4	3	1	36	27	4	...	1	1	2	1	1	5	....	2	22	10	4	18	19	2	1
No diagnosis.—S. D.....	114	33	22	11	81	61	2	1	1	7	2	7	30	1	1	5	11	66	13	20	89	4	1
Croup.....	7	2	2	....	5	4	....	....	1	....	....	....	....	....	....	1	6	....	....	3	4	....	....
Sore throat.....	45	6	4	2	39	29	4	....	....	1	1	4	14	1	....	3	12	15	15	3	23	9	....
Scarlet fever.....	23	1	1	....	22	16	4	....	....	1	....	1	20	....	....	1	1	1	3	4	17	2	....
Precautionary.....	170	10	5	5	160	128	14	1	4	2	3	8	....	....	....	....	....	....	84	....	....	....	....
Total.....	1,105	297	226	71	808	631	59	2	16	32	22	46	590	17	20	51	115	142	210	272	595	50	10
Secondary.....	211	77	55	22	134	95	14	1	....	4	4	16	....	....	....	....	....	....	....	....	....	....	....

Total, 1,316 for the year 1903.

## EXAMINATIONS OF THE WIDAL REACTION IN CASES OF SUSPECTED TYPHOID FEVER.

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The discovery by Widal that persons who had been affected with typhoid fever for a certain period of time developed within the system a certain toxic product which had the power of checking the life of the true typhoid bacillus grown outside of the body was utilized by the Board, as was the case in other States and certain cities.

This reaction is obtained by securing from the ear or the tip of the finger of the patient a single drop of blood. The serum of this blood, when mixed in certain proportions of strength with a large quantity of the living typhoid bacilli, causes the live organisms to grow sluggish in their motile action and finally to unite with others in the same mixture, producing a massing or clumping of the organisms.

This reaction may take place in from twenty to ninety minutes, according to the strength of the toxic or antitoxic material in the blood serum tested.

The organisms which are subjected to the test must be at least twenty-four hours old, and not older. This necessitates the planting and growing of a fresh culture every twenty-four hours. To accomplish this, nutrient media of blood serum or agar agar must be kept on hand and in stock to continue the growth of the culture for stock purposes. From this stock growth, the amount of organisms which may be gathered upon the tip of a needle is introduced into a nutrient media of beef broth or bouillon and here grown for the twenty-four hours.

As these facilities and all the paraphernalia necessary to make this test are not available to the average physician, it is necessary for some central laboratory to undertake this work.



As typhoid fever is a communicable disease, it is the duty of all States and municipal boards of health to aid the physician in such cases as far as possible, by determining for the physician the presence of the disease, the public as a whole receiving the benefit of an early confirmation of diagnosis and the better care of the patient and proper disposal of his excreta.

To facilitate the offer of the Board to make this test for physicians, typhoid "outfits" are placed at all the depositories where diphtheria culture tubes and sputum outfits may be obtained.

This outfit consists of a card upon which the history of the case may be entered, the name of the physician, etc. Also a small piece of thin sheet aluminum to receive the drop of blood taken from the patient, a three-cornered glover's needle for puncturing the skin, and a small wire loop for transference of the drop of blood from the skin to the aluminum plate.

A report of the result can usually be given to the physician, by telephone, on the morning following the day upon which the sample is received.

As a result of this offer of assistance, physicians availed themselves in many positive cases, and in many cases in which they were somewhat in doubt, as is shown by the following table:

Positive.....	72
Negative.....	105
Unsatisfactory.....	8
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Total.....	185

## SMALL-POX.

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The outbreak of small-pox which prevailed during the year 1902 through the United States manifested itself in this State to a degree which occasioned some anxiety among health officers. The amount of the disease present did not create alarm for the proportion of cases in this State, even with its dense population, did not reach the proportions that it had in other States.

At the end of the year 1902 the epidemic had practically subsided. The several patients detained in the hospital had recovered and been discharged, and quarantine, which had been established at some few residences, had been raised, and it was hoped that the State might remain free from further invasion of the disease. But this anticipation was not to be realized, for in the month of January an isolated case appeared in Pawtucket, and from that time until the last months of the year cases appeared individually and in groups.

Visitors or new residents from Canada and from neighboring States, having been exposed to the disease before arrival, would develop the symptoms. Many of these cases, as in the previous year, were so mild that the patients were often found in the stage of desquamation, or recovery, and would have not been seen if fresh cases which had been exposed to these mild cases had not developed.

The State, however, has to be congratulated that the disease did not prevail to dangerous proportions as had occurred in other States, where certain towns would develop an unwarrantable number of cases in a short time.

The anxiety occasioned by the presence of the disease in 1902, and the rigorous and thorough action of the health boards and their officers in providing vaccination, placed the State in a fairly good

state of immunization. Quite a percentage of persons were probably without protection, but the operatives in many of the manufactories had received vaccination and the public school children were assumed to be protected.

The prompt attention given to discovered cases by the health officers was a factor in prevention of the spread of the disease, and the difficult work of these officers could only be appreciated by those who accompanied them upon their visits of discovery and attempts at quarantine. The indifference of certain foreign nationalities and their opposition to any attempt of control was among the annoying difficulties to be met. At times instruction, advice, vaccination, and threats were of no avail, necessitating the co-operation of the police, who were usually prompt and willing to assist the health officer in his efforts. At times the fatherly and respected advice of the clergy was most effective in convincing the affected families that the authorities were endeavoring to work for their individual good as well as for the public good.

At all times the Secretary of the Board stood in readiness and did answer all calls from health officers and physicians for assistance in diagnosis and advice as to available means for control.

During the year 1903 there were reported or discovered about 60 cases of small-pox in the different parts of the State; many cases must have passed through the several stages of the disease without discovery. Of this number, there were but 3 deaths.

The distribution of the cases was as follows: Central Falls, 11; Pawtucket, 10; Coventry and Warwick, 25; Providence city, 5; Cumberland, 2; Lonsdale, 2; Woonsocket, 6; Lymanville, 1; Tiverton, 1. Total, 63.

#### CENTRAL FALLS.

On January 26th a physician was called to attend a child which presented the symptoms of small-pox, and found that the mother was recovering from that disease. A child was born during her sickness; the infant subsequently received the infection and died.

They were removed to the small-pox hospital at Crow Point, and were discharged as recovered on February 25th.

On April 5th the hospital was reopened to receive new cases. A man who worked in the Farwell Worsted Mills and a boy who lived in the same block with him were found. Forty other persons also boarded in the same house, and visitors had frequented the tenements of the families where these cases occurred. On April 12th the mother of the boy was taken ill with the disease.

On April 26th a case was discovered working in the Lebanon Mills.

On May 3d a boy of eight years was found who had been sick for four weeks, without the attendance of a physician. At this time he was in the stage of desquamation, the crusts not yet having been entirely detached.

On the way to the hospital with this case another was found, which, with all the previous cases, were accommodated and quarantined in the detention hospital.

On May 19th another case having a light form of the disease was placed in the hospital.

#### PAWTUCKET.

On January 2d a man who had been working in the U. S. Finishing Co. was found ill with small-pox and was taken to the detention hospital, which had been closed since December 26th, 1902. On April 2d four cases appeared who had been operatives in the Hope Webbing Co. These cases were mild, and upon investigation it was discovered that there had been three other mild undiscovered cases in this mill. In all there occurred ten cases.

#### PAWTUCKET VALLEY.

In Anthony village, town of Coventry, four cases were found in June. An unusual procedure was deemed necessary by the local health authorities. The public school and the free library were closed. On June 19th another case occurred. On August 3d an-

other case was diagnosed by the health officer. On September 20th a second case at Spring Lake, making seven cases in Coventry during the year.

#### WARWICK.

A French-Canadian on his way to consult his own physician concerning a suspicious symptom which disturbed him, was met on the way by another physician who, noticing the appearances of the man, advised the man to return to his home, where he was examined by the health officer, and the case established as one of small-pox. Later on, June 19th, a physician was called to attend a case, when he found that both a child and his father had the disease and that the wife was just recovering. These cases were removed to the town hospital for small-pox. On June 28th another boy two years old was found at this time in the village of Lippitt; he was quarantined at this home.

#### CUMBERLAND.

On August 2d two cases were found in Cumberland. On the 12th one of these died, and the undertaker who conducted the burial was taken ill on the 12th.

#### LINCOLN.

On September 17th a case was discovered by the health officer walking on the street in Lonsdale. He was sent to the hospital for detention. October 20th a case was found working in the Glenlyon Dye Works. It was necessary to reopen the hospital to receive this case.

#### WOONSOCKET.

Early in May or the last of April a family which had recently arrived from Canada was found to have three cases of small-pox. The hospital, which had been closed, was reopened to receive them. They were discharged May 23d.



On June 10th one case was discovered which had come from Fall River, where the disease had been contracted, the patient having left there two weeks previously. The patient was an operative in the Social Mill. It was necessary to again reopen and place the hospital in commission. Four days later two more cases, a mother and her infant, were removed to the hospital.

#### TIVERTON.

A Portuguese, boarding at a house on a farm in Tiverton, was found by his physician to have the disease. The health officer was notified. The case had arrived in Fall River from the Azores one week previously. The milk route, which started from this farm, was discontinued.

#### PROVIDENCE.

There occurred only five cases in the city of Providence, which might properly feel fortunate, considering the number of manufacturing within its borders, and the large number of foreign workers engaged in the textile mills.

On June 5th a man was found who had distinct symptoms of small-pox. He was at once removed to the hospital at Field's Point. With him, also, went his wife to assist in caring for him; both had been vaccinated in childhood. Two of their children, one a babe, and the other two years old, were also removed. At this time they both had an abortive form of small-pox papules. They also both developed a typical measles eruption. A third child was left at home, having been lodged with a family living down stairs in the same house with the affected ones. The father developed symptoms on June 5th. The third child was removed to the friend's family on June 8th. On June 12th this child also developed typical symptoms of small-pox, but not measles, and was removed to the hospital, thus making four cases. The cost of caring for these four until July 6th, when they were discharged, was \$1,198.34.



The disease thus remained dormant as far as the city of Providence was concerned until November 2d, when a young lady was discovered in the out-patient department of the Rhode Island Hospital. She was removed to the hospital. The case was a mild one, and she was discharged on November 21st. She had been exposed to a case of small-pox in a house in Brewer, Me. She escaped from the quarantine on October 17th and came to Providence. The cost of caring for this one case was \$331.92.

#### NORTH PROVIDENCE.

On April 6th a case occurred in Lymansville; the patient had been ill for several days, but had kept at work in the dye house where she was employed. It was suspected that the origin of this case was from exposure or contact with another operative in the same mill who had an eruption which was described as similar to the case found. This person had recently gone to Manchester, New Hampshire. The authorities there were notified.

# THE WORKING OF THE MEDICAL PRACTICE ACT.

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Under the act controlling the practice of medicine in this State, which was passed in 1895, provision was made that certificates or licenses to practice medicine should be issued to all persons who had been in practice for three years previous to the passage of the act. This necessarily included a certain number of ignorant practitioners and charlatans who had had no medical education, and also included a large proportion of physicians who were graduates of medical schools. All those who did not come under this provision should present a diploma from a medical school in good standing, recognized by the Board as such. If the school had no standing whatever, or the applicant was a non-graduate, such applicant was required to take a full examination in the several branches of medicine. If the school from which he graduated had a fair standing he was given a supplementary examination.

In 1901 the law was changed, providing that examination should be required from all applicants whether from schools having good qualifications or not, or if the applicant was a non-graduate.

During the present year there were 67 applications, action upon which was as follows:

## EXAMINATIONS, 1903.

Passed first examination.....	44
Passed second examination.....	4
Passed third examination.....	1
Passed fourth examination.....	1
Passed first examination, Senior year in college.....	1
Passed first examination, Junior year in college.....	1

Failed on first examination.....	12
Failed on second examination.....	1
Failed on fourth examination.....	1
Failed on first examination, under-graduate.....	1
	<hr/>
	15
Total.....	67

The following table gives the percentages acquired by the applicants coming from different schools:

## RESULTS OF EXAMINATIONS DURING 1903.

COLLEGE.	Number passed.	Percentage.	Number failed.	Percentage.
Baltimore Medical College.....	2	{ 82.6 79.8	3	{ 58.2 71.9 72.7
Bowdoin Medical College.....	1	76.5		
		{ 81.6 75.0		
College of Physicians and Surgeons, Baltimore.....	5	{ 85.0 82.0 79.3		
College of Physicians and Surgeons, Chicago.....	1	79.4		
College of Physicians and Surgeons, New York.....	2	{ 80.3 81.9		
Cornell University, Medical Department.....	1	86.1		
Dartmouth Medical College.....	2	{ 79.0 79.6	1	69.1
Detroit College of Medicine and Surgery.....	1	78.1		
Georgetown University, Medical Department.....	1	82.1		
Georgia College, Eclectic Medicine and Surgery.....			1	67.8
		{ 76.8 81.1 89.7 77.9		
Harvard University Medical School.....	9	{ 76.5 88.3 84.5 78.4 89.1		
Illinois Medical College.....	2	{ 81.4 75.0	2	{ 67.3 73.5

## RESULTS OF EXAMINATIONS DURING 1903.—Concluded.

COLLEGE.	Number passed.	Percentage.	Number failed.	Percentage.
Jefferson Medical College.....	3	{ 82.0 78.6 82.6	1	71.9
Johns Hopkins University, Medical Department.....	1	85.1		
Laval University, Medical Department.....	1	75.1		
Leonard Medical College.....	1	78.6		
McGill University, Medical Department.....	2	{ 87.3 87.9		
Medico Chirurgical College, of Philadelphia.....			1	71.4
N. Y. Homœopathic College and Hospital.....			1	57.9
Royal University of Naples.....	2	{ 76.8 77.1	2	{ 66.0 63.4
School of Medicine and Surgery, of Lisbon.....	1	76.0		
Syracuse University, Medical Department.....	1	76.9		
Tufts College Medical School.....			1	74.2
Tulane University, Medical Department.....	1	85.4		
University and Bellevue Hospital Medical College.....	2	{ 82.0 83.5		
University of Edinburgh.....	1	88.2		
University of Michigan, Medical Department.....	1	84.8		
University of Pennsylvania, Medical Department.....	1	81.6		
University of the South, Medical Department.....	1	75.0		
University of Vermont, Medical Department.....	4	{ 79.0 77.9 79.6 75.0	1	72.1
Victoria University, Medical Department.....			1	69.4
N. Y. Medical College and Hospital for Women.....	1	82.3		
Yale University Medical School.....	1	86.8		
Total number examined, 67.....	52		15	
Average percentage per applicant.....		81.0		68.4

## PROSECUTIONS.

Evidence having been presented to the Board that certain druggists within the State were prescribing for and treating patients in a manner which would indicate their desire to practice medicine, such evidence was confirmed by investigation, and two druggists engaged in business in the city of Providence were brought before the courts by the secretary of the Board, as required by the General Laws.

The evidence showed that one of these pharmacists was in the habit of receiving patients in his store, inquired into the character of their illness, diagnosed the condition of disease, and further advised them as to the proper course of treatment; prescribing for them certain drugs, filling the prescriptions, and giving advice as to the manner of taking the drugs prescribed. He also received compensation, in the form of money, for the mixed services thus rendered. This defendant recommended himself as a stomach specialist. The case when presented before the district court was dismissed by the judge upon grounds which could not be fully understood or determined.

The second case was that of a druggist, who was in the habit of receiving surgical cases, prescribing for same, dressing wounds, and receiving compensation therefor. This case reached the Grand Jury, which determined, for reasons of its own, that he was not engaged in the practice of medicine.

## ATTEMPTS OF PHARMACISTS TO SECURE MEDICAL LEGISLATION IN THEIR BEHALF.

As a sequence of the action necessarily taken by the Board in connection with the two cases prosecuted under the Medical Practice Act, the pharmacists presented at the January session of the legislature a bill providing that druggists might be permitted to recommend the use of proprietary or other medicines for the treatment of disease. Naturally, opposition was raised by those interested in the



Medical Practice Act, especially by the State Board of Health, who had the care of this legislation, on the ground that permission given to the pharmacists in this way would be readily construed as permission to undertake the treatment and cure of all diseases, even the treatment of surgical cases. The Board had never interpreted the present law as an intention to prevent druggists from recommending to anyone who applied for the same, drugs for any purpose for which the applicant desired them; that the recommendation or statement that certain proprietary medicines or drugs had been efficient in certain cases, or that certain drugs were said to be of value as stated on the labels or as indicated by numerous sales, did not constitute the practice of medicine, but was merely an act which was the privilege of any citizen to recommend anything of value to his neighbor; but when the pharmacists endeavored to seek out the cause of the disease or to diagnose the conditions under which the patient felt he was suffering, and then assume the responsibility of the result of the treatment which he might recommend, there could be little difference between such an act and that usually done by a physician, who is credited with a knowledge of medicine and is engaged in the practice of medicine. The meaning of the law is considered as a protection to the public against injury resulting from dependence upon ignorance, and not for the protection of either physicians or druggists.

The legislature did not look favorably upon the amendment to the Medical Practice Act for the benefit of druggists, but felt that the public would be more satisfactorily protected under the law as it then existed, and failed to make any change.

#### NON-ISSUANCE OF TEMPORARY LICENSES.

Frequent requests having been made by applicants to receive a certificate to practice medicine that they might be allowed to open an office and commence and continue practice during the time intervening between the presentation of the application and the succeeding meeting of the Board, it was determined by action of the

Board that this would not be practicable. Such permission had been given in one or two instances previously, to the discomfort of all concerned. In one instance the applicant, having secured his office and displayed his sign, came up subsequently for examination and failed. Under these circumstances the Board could not continue the permission, especially on the grounds that said applicant had shown positively that he was not qualified. It was therefore necessary to require the applicant to remove his sign, to discontinue the use of his business cards, and not to receive or visit patients. This naturally awakened considerable comment from the applicant's friends, and others, which resulted in the disclosure of the cause of his discontinuance and discredited him in the neighborhood, even after he might have later successfully passed the examinations of the Board.

In another instance it was found that the applicant merely wished to remain for a short time, in order to practice charlatanic methods, and this would not be discovered until the time for the examination came; he would then be warned that from the character of his practice he could not receive the examination, and he would usually reply that he had already secured all that he could of the practice and money in the neighborhood where he had located, and would thereupon depart to other States, which had equally lax regulations.

The delay which might come to a recent graduate could not be very great, as the examinations are held every three months.

## NUMBER OF PHYSICIANS REGISTERED IN EACH TOWN.

The following table is self-explanatory and is of interest as showing the geographical distribution of the physicians of the State, Jan. 1, 1904.

	Estimated Population.	Physicians.	Number of Phy- sicians to every 1,000 inhabitants.	Regular.	Homeopathic.	Eclectic.	Miscellaneous.
Barrington.....	1,107						
Bristol.....	7,062	13	1.8	11	2		
Warren.....	5,174	11	2.1	11			
Coventry.....	5,301	6	1.1	6			
East Greenwich.....	2,742	4	1.1	2	2		
West Greenwich.....	590						
Warwick.....	21,709	27	1.2	26	1		
Jamestown.....	1,615	5	3.1*	5			
Little Compton.....	1,132	3	2.6	3			
Middletown.....	1,491						
NEWPORT.....	22,310	44	1.9*	39	4		1
New Shoreham.....	1,404	3	2.1*	2	1		
Portsmouth.....	2,121	4	1.9	4			
Tiverton.....	2,991	4	1.3	4			
Burrillville.....	6,406	9	1.4	9			
CENTRAL FALLS.....	18,675	17	.9	17			
Cranston.....	14,041	13	.9	13			
Cumberland.....	9,013	10	1.1	10			
East Providence.....	12,590	15	1.2	13	2		
Foster.....	1,141	1	.9	1			
Glocester.....	1,410	1	.7	1			
Johnston.....	3,937	4	1.0	4			
Lincoln.....	9,059	8	.9	8			
North Providence.....	3,130	2	.6	1	1		
North Smithfield.....	2,357	1	.4	1			
PAWTUCKET.....	40,630	62	1.5	56	4	1	1
PROVIDENCE.....	181,225	349	1.9	291	43	6	9
Scituate.....	3,380	3	.9	3			
Smithfield.....	2,071	2	1.0	2			
WOONSOCKET.....	29,071	30	1.0	28	2		
Charlestown.....	981	1	1.0	1			
Exeter.....	830						
Hopkinton.....	2,577	6	2.3	6			
Narragansett.....	1,535	10	6.5*	10			
North Kingstown.....	4,128	2	.5	2			
Richmond.....	1,491	3	2.0	3			
South Kingstown.....	5,057	11	2.1	10			1
Westerly.....	7,618	18	2.4*	15	3		
Adjoining States.....		56		53	3		
Total number.....	437,888	758	1.7	671	68	7	12

\* These proportions are excessive, as the summer visitors are not included in the population, while the summer practitioners are included with those registered.

## REPORT OF DELEGATE TO THE CONFERENCE ON THE PLAGUE SITUATION IN SAN FRANCISCO.

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Pursuant to the resolutions passed by the Board at its meeting on November 21, 1902;

The secretary reported that he had attended, as a delegate representing the Board, at the conference held at Washington in January, called by the Surgeon General of the Public Health and Marine Hospital Service in pursuance of a request from eighteen different States that such a conference should be called, this Board being one applying for the call [see page 265 of the previous report (1902)], to consider the conditions existing in San Francisco, California, in relation to the presence of plague in that city.

The secretary stated that a spirited and earnest meeting was held. The Surgeon General, Dr. Wyman, has supported the delegates in their demand for a change of action on the part of the city and State health authorities of San Francisco and of California.

A demand was made upon these authorities that they recognize and admit the fact that plague has existed, and was still present in Chinatown, San Francisco, and that assurance be immediately given that immediate steps would be taken to co-operate with the Marine Hospital Service to stamp out the disease.

This admission was later made and assurance given. Assistance was asked of the Public Health and Marine Hospital Service, which was given. The result of the national, State and municipal work was the complete cleaning out of the district in San Francisco, where plague prevailed, including the so-called Chinatown. A crusade against rats, followed by their wholesale destruction, was made at

the same time. Blind alleys and underground passages were abolished, and all new structures erected under perfect sanitary conditions, with rat proof protectors for sewers and in foundations of buildings. Under these strong activities the plague was checked, and the several States, which had experienced fear of invasion from California, felt, assured of safety.

## SANATORIA FOR CONSUMPTIVES.

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### STATE SANATORIUM.

As the result of the examination of several sites for a sanatorium, the State Sanatorium Commission in its report recommended the purchase of a site selected for the erection of the sanatorium at Wallum Pond in the northwestern corner of the State, at an elevation of about 600 feet.

An option was obtained on this site, and competitive plans for buildings were asked for. Eighteen architects submitted plans, and the one selected was presented by a local firm of architects, Thornton & Thornton.

The estimated cost of erection and equipment with water, lights, and sewage disposal was \$100,000. The legislature made available an appropriation for \$75,000. Bids were asked from contractors, and the different parts of the work were awarded. By the middle of May excavations were commenced. The buildings are to consist of two ward wings 179 feet long, 26 feet wide, and 27 feet high, being two-story structures. Each ward on each floor is intended to accommodate 25 beds, this giving 100 beds in all. A solarium is to be placed at the south end of each of these buildings.

The administration building, placed between the two wings and to the rear, and connected by covered corridors, is to be 74 feet long, 47 feet wide, and 33 feet high.

The service building 105 feet long, 30 feet wide, and 33 feet high, at the rear and running at right angles; the dining hall to be 41 x 33 feet. Stable completes the equipment.

The water supply is taken from Wallum Pond, or Lake, a body of



water which has an comparatively unoccupied water-shed. The water is clear, the bottom being readily seen at a depth of fifteen feet. Chemical and bacteriological analyses of this water were made for the commission by the State Board of Health, samples being taken on October 23rd, and it was found to be of the finest quality. The water is to be supplied by an automatic steam pump, located near the pond, steam to be supplied by a pipe laid from the boiler-room of the sanatorium several hundred yards away. The pressure is to be maintained in a pressure tank located in the pump house. On November 18th a formal inspection of the completed buildings was made by the Governor and legislators, on invitation of the commission. At this time the buildings were supplied with the necessary equipment of pumps, boilers, dynamo, etc., but no furnishings had been provided. Much grading was also yet to be done, and a plant for disposal of the sewage from the institution was yet to be installed.

The buildings remained in this condition at the end of the year.

#### PINE RIDGE CAMP.

Observing the successful results obtained in the care and in the improvement of tuberculosis patients by the open-air treatment in White-Haven, Pa., and elsewhere, by utilizing inexpensive housing, Dr. William H. Peters, of Providence, advocated the establishment of an out-door camp for the reception of incipient cases of consumption to be located in this State.

Through the response of several philanthropic citizens and business firms, funds were raised and a site selected in the town of Foster, on the Danielson trolley line, and given the name of "Pine Ridge Camp."

Here were pitched tents, and a woodshed found on the premises was made over into a servicable kitchen, and a dining-room was erected.

The assistance of several leading physician was secured as a con-

sulting and visiting staff of inspection, and a resident physician and a trained nurse were installed.

With about twenty tents available, there was an average attendance during the summer months of 35 patients. The camp was opened in June and the tents, except two or three, were struck the first of November. During the summer there were received in the camp, for periods varying from a few weeks to a few months each, 59 cases in all.

Owing to the impracticability of heating the tents successfully when storms or excessive cold weather might prevail, it was deemed desirable to erect, as soon as funds might be available, some economical form of structures or huts which would serve to give suitable protection in winter.

## A LAW PROVIDING FOR A STATE BOARD OF EXAMINERS OF BARBERS.\*

At the last January session the legislature passed a bill providing for the appointment of a Board of Examiners of Barbers, to control the number and the ability of those operating in this capacity. Owing to the rapid increase in the number of barbers of foreign importation, considerable of the work done in this line was being done in a slovenly, uncleanly manner, and with the possibility of the spread of communicable diseases peculiar to the skin, scalp, and beard.

While the plausible argument of desire to protect the public from the dangers threatened from the spread of these diseases was presented as the main reason for passing this bill, yet much controlling provision was introduced with the bill which pertained to the commercial and trade interests.

One of the provisions of the bill was that certain rules should be established for the direction of the barber in the exercise of care and the promotion of cleanliness from a sanitary standpoint, and that these rules must be satisfactory to the State Board of Health.

After consideration of the subject, the following rules were made. While the rules were quite comprehensive, and in some instances may require some extra exertion on the part of the operators, yet, if found in any way impracticable, they could be modified to meet the common-sense requirement of sanitary principles:

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\* Reprint from *Monthly Bulletin*, Vol. XV, 1903.

## STATE BOARD OF EXAMINERS OF BARBERS.

## AN ACT CONCERNING THE BOARD OF EXAMINERS OF BARBERS.

GENERAL ASSEMBLY, JANUARY SESSION, A. D., 1903.

*It is enacted by the General Assembly as follows:*

SEC. 4. Said board shall have power to adopt rules and regulations prescribing the sanitary requirement of a barber shop, subject to the approval of the state board of health, and to cause the rules and regulations so approved to be printed in suitable form, and to transmit a copy thereof to the proprietor of each barber shop in each city in this state. It shall be the duty of every proprietor, or person operating a barber shop in each city in this state, to keep posted in a conspicuous place in his shop, so as to be easily read by his customers, a copy of such rules and regulations. A failure or any such proprietor or person operating a barber shop to keep such rules so posted, or to obey the requirements thereof, shall be sufficient cause for the revocation of his certificate of registration; but no such certificate of registration shall be revoked without a reasonable opportunity being offered to such proprietor or person operating a barber shop to be heard in his defense. Any member of said board shall have power to enter and make reasonable examination of any barber shop in any city in this state during business hours, for the purpose of ascertaining the sanitary condition thereof. Any barber shop in any city in this state in which tools, appliances, and furnishings in use therein are kept in an unclean and unsanitary condition, so as to endanger health, is hereby declared to be a common nuisance, and the proprietor thereof shall be subject to prosecution and punishment therefor.

*Rules and Regulations for Government of Barber Shops in the State of Rhode Island,  
Adopted by the State Board of Examiners of Barbers, and Approved by  
the State Board of Health.*

1. The place of business, together with the furniture, shall be kept at all times in a cleanly condition.

2. The floors of all barber shops must be thoroughly cleaned at least twice every week. Cuspidors must be thoroughly cleaned every day, and not more than one bootblackening chair shall be allowed in any one barber shop.

3. All barber shops must be provided with running hot and cold water.

4. No person shall be allowed to use any barber shop as a dormitory.

5. The face must be thoroughly cleansed before shaving.

6. Barbers must clean their hands thoroughly immediately before serving each customer.

7. No less than two clean towels shall be used for each customer, and any towel once used must not be used again until laundered.

8. All razors shall be cleansed in running hot water before each use. Clippers, combs, tweezers, and scissors shall be sterilized by immersion not less than five minutes in either a one per cent. solution of tricresol, a forty per cent. solution of formaldehyde, or a seventy per cent. solution of alcohol, after every separate use thereof.

9. Razor strops shall be kept clean, and never wiped off with the hand or blown upon with the breath.

10. Barbers shall not blow away with the breath any hairs after cutting, but use a towel, or bulb, or brush.

11. Barbers shall keep their finger nails clean and cut short.

12. Hair brushes shall be kept thoroughly cleansed. Shaving brushes and mugs must be thoroughly rinsed in running boiling water after each separate use.

13. No stick caustic or lump alum shall be used. Any material used to stop the flow of blood shall be used only in a powdered or a liquid form, and applied with a clean towel.

14. The use of powder puffs and sponges is prohibited.

15. The imbibing of intoxicating liquors during business hours is absolutely prohibited.

16. Persons with an eruption upon the face, of a supposedly contagious or infectious nature, shall be served at their own homes, only with such implements as belong personally to the customer.

17. These rules shall be placed in a conspicuous place in every barber shop.

18. All printed paper for wiping the lather off razors must be discarded, and none but clean unprinted paper will be allowed to be used.

19. Violation of any of the above rules will be sufficient cause to revoke license.



## THE POLLUTION OF THE STREAMS.\*

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The subject is not a new one, nor is it one confined to this State. In fact, all States have difficulties, various in character, thrust upon them as time and industry advance. Each locality feels that it is more abused than any other, yet the patience shown with the existing conditions is characteristic of the good nature shown by the American people, and which has been so strongly shown by the tendency to make the best of everything during the recent difficulties with the coal embargo.

That there are several rivers in this State which are being polluted to the point of stretching this patience to its limit is well known; and it may be predicted with certainty that this pollution will be brought into control at some future period. Like all nuisances, moral, physical, or political, the more objectionable they have become the greater the possibility of correction and reform.

The rivers in this State which are rapidly reaching the point of demand for reform are naturally those which are in the closely populated industrial centres.

The Moshassuck, the Pocasset, and the Woonasquatucket, though in their names suggestive of the primeval purity which they once possessed, have become fouled to the extent of becoming physical as well as industrial nuisances.

By the decomposition of the manufacturers' wastes thrown into these streams, not only have they become strongly objectionable to sight and smell, but have become obstacles to the industrial uses which the water was previously put to.

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\* Reprint from *Monthly Bulletin*, Vol. XV, 1903.



The industry which is located at the head of the stream, above all points of possible pollution, is the fortunate one. Such as are located below the first are unfortunate in proportion to the distance they are removed from the first and according to the number of polluting industries located on the stream above them; and here a peculiar trait in human nature crops out. Although great objection is raised against receiving the polluted water from their neighbors up stream, yet when it becomes necessary to make disposal of their own wastes they have little thought of their friends below them located on the stream.

This condition does not arise from a disposition to "get even," with the average, but is naturally brought about on account of the expense which attends the disposal of all wastes.

In such States as are sufficiently advanced in hygienic civilization as to have just laws controlling the use of streams, no city, town, or industry is allowed to use the waters of any stream, whether for potable or industrial purposes, without proper restrictions controlling its purity before and after use; and no system of water supply for either purpose may be introduced without adequate means for its disposal after use. The introduction of a water supply to a town means also a system of sewers coincident.

The excess of introduction must be provided for, and after its use it must necessarily be polluted, and that pollution must be so disposed of that it shall not be objectionable to persons or industries.

Many of the States in the Union have satisfactory laws controlling these matters. Rhode Island has none, except a provision which is made for the protection of the Woonsocket water shed. In this case the local authorities or the State Board of Health may interfere. The pollution of the streams used for industrial, and even those which are used for drinking purposes is free to anyone who desires to pollute them. There is no commission or board having any authority over such offensive or dangerous action, the only redress or correction obtainable being through a civil process against those causing the pollution.

Although it has heretofore been considered as precocious and premature to ask for such legislation as may establish a commission giving controlling power over all new users of streams, as well as of those already established, yet the nuisances are becoming sufficiently stern to make it hopeful, that such legislation is demanded.

Opposition to such action would naturally be presented by large owners of water privileges, who might fear offensive and dictatorial requirements from such a board; and especially would obstruction come from those industries which find themselves safely located at the head of the stream.

It is believed, however, that those who are located down the stream, although put to expense to purify their own wastes, would, on the other hand, be so benefited by the purification of the water which they receive from above as to make them ready and willing to assist legislation looking to this end.

Any fear of such a control which the water privileges on the Pawtuxet river might have had heretofore has been largely removed by constant patrol and inspection of the river banks by the city of Providence, and also by the fact that the system of filtration which is being established for the supply of Providence will reduce the dangers of chance pollution to a minimum.

## STATUS OF THE BRISTOL AND WARREN WATER SUPPLY.

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The subject of the condition of the water supply of the Bristol and Warren Water Company was under consideration during the year 1902.

At the first meeting of the Board held in 1903 the evidence at had in reference to the quality of the water and the condition of the watershed was taken up.

At a meeting held February 13, 1903, and a second meeting held on April 24, 1903, the report of the expert who had been employed by the Bristol and Warren Water Company to give an opinion of the conditions present was fully considered.

Upon receiving this report the water company had requested the State Board of Health to reconsider its action in warning the company and the citizens of Bristol to boil the water used by them when taken from the supply of said company.

His contention was that the Board had no legal authority to interfere in the matter except so far as the health of the people was in danger, and that no danger existed; that the fact that the water contained large amounts of chlorine and was of high color had no significance from a sanitary standpoint; that the only manner in which disease could be introduced through water was from the presence in the water of typhoid bacilli or cholera bacilli, and that these organisms could only come from human beings suffering from those diseases; that persons having those diseases would not be in a condition to "go fishing," at which times they could infect the water; that if people using the pond for fishing were near the reservoir they would not be so careless as to contaminate the pond; that the organisms found in the fœcal matter of cows and pigs could in no way produce disease in the human system; that the presence of the

*bacillus coli communis* had no dangerous significance; that if a person was so careless as to contaminate the water supply there was very little possibility of this faecal matter finding its way to the pipes and the users of the water.

The results of individual chemical and bacteriological tests of the water supply had been made by experts at the request of the company, and it was concluded that this water supply was as good as the average supply of surface waters and indicated no source of danger.

The secretary presented evidence on the other side of the question, in the form of reports from Samuel M. Gray of Providence, Rudolph Hering of New York, Prof. Kinnicutt of the Worcester Polytechnic School, and from Mr. Clark, chief chemist of the State Board of Health of Massachusetts, all eminent experts on the question of water supplies. They all reported the water-shed to be in an unsanitary state as affecting the water supply, and that the supply was one which might be productive of danger to the consumers of the supply.

After careful consideration of the evidence submitted, the secretary was ordered to transmit to the Bristol and Warren Water Company its conclusions, and also to transmit a copy of the same to the town council of Bristol.

RHODE ISLAND STATE BOARD OF HEALTH,

PROVIDENCE, R. I., April 24, 1903.

*Bristol and Warren Water Works, Bristol R. I.*

GENTLEMEN:—In reply to your request of December 1, 1902, asking that this Board "in justice to ourselves and in the interest of those who take our water, withdraw as promptly as may be its recent recommendation to the town of Bristol and take such other steps as will, so far as possible, undo the effect caused by the unwarranted attack made by your Board in its action of October 3rd., upon the sanitary quality of the water and the water-sheds of this company," and basing your request upon information obtained by you in a report which was submitted to the Board, the Board is obliged to state that after a perusal of said report and after considering the conditions existing in connection with the water supply and water-shed of the Bristol and Warren Water Works, it can find no sufficient reason for changing its views of the situation as expressed in a communication to the town council of Bristol, dated October 3rd, 1902.



The Board in its action in the matter is actuated by the motive which it has always endeavored to maintain; to advise the public and the purveyors of public supplies of any conditions which may at any time affect the public health.

In the report submitted there is an intimation on the part of your advisor, wherein he questions the right of the Board to take cognizance of the conditions, that the Board has used the word value improperly. In using this word the Board does not wish it understood that the term applies to the monetary or commercial value. That is a matter with which the Board has nothing to do. The word was used, as it was assumed by the Board, as meaning the sanitary value.

Inasmuch as your opinion of the conditions of the existing supply will naturally be prejudiced by the report which you have been to the expense of obtaining, and believing that you desire some reason for the opinion of the Board in differing with the conclusions of the report, the following opinions are expressed.

In taking this position the Board does not claim to be supreme, and while open to conviction to any scientific or practical conclusions, it must naturally be influenced by the opinion and judgment, not of one person, but of the consensus of opinion expressed by men who have had practical experience in these matters.

The objection to the first contention, that the presence of cattle and pigs in the water supply, and the mixture of the fecal matter coming from these animals with the water supply, is not dangerous, is not believed to be the best opinion of the best men familiar with these subjects. It may be true that certain bacteriological findings in the laboratory may have led to expressions of opinion that the fecal matter of animals could contain nothing deleterious to the human system. It is to be remembered in this connection, however, that the theoretical conditions of the laboratory must be modified by the practical common sense of the sanitarian.

In the present light of our knowledge of the dangers attending the introduction of fecal matter in the human system and of our lack of complete knowledge of the life history of the bacillus typhosus and that of the bacillus coli communis, and our lack of understanding of the relation which the two bear to each other, and with the increasing complications introduced by our increased knowledge of the para-colon bacillus and the knowledge of the possibilities of morphological changes with change in environment of all bacteria, the Board does not feel justified in assuming that the bacillus of typhoid fever is the only organism which may be deleterious to the human system when introduced into the intestinal canal, and which may possibly be present in the feces of human beings and possibly in the dejecta of animals.

Without our scientific laboratory knowledge and from its past experiences dependent upon the ingestion of water contaminated with fecal matter, or highly charged with organic matter in a rapid state of fermentation, the practical health officer and sanitarian would look upon a water so contaminated as unfit for potable use and would deem it desirable to caution the users of such a water.

In making its conclusions the Board has not relied entirely upon the judgment of its own members, but has received opinions from some of the well-known civil engineers, chemists, and sanitarians. The opinions of Mr. Rudolph Hering, of the city and State of New York, whose opinion has been sought on these matters in all parts of the country; that of Prof. Leonard P. Kinnicutt, of the city of Worcester, Massachusetts, Director of the Department of Chemistry of the Worcester Polytechnic Institute, who is continually giving instructions and professional advice upon this subject of water supplies; and that of H. W. Clark, of North Andover, Massachusetts, chemist and bacteriologist, having charge of the Experiment Station and laboratories of the State Board of Health of Massachusetts, have been considered. All of these men are well known among their colleagues as efficient sanitarians, and have had exceptional advantages in having constant contact not only with most recent literature upon the subject, but in having the opportunity of applying in a *practical* way the theories advanced by laboratory work.

It is suggested by Prof. Kinnicutt that possibly tape worm, a parasite which finds its way into the intestine of man, may be conveyed from the dejecta of a pig to the consumer through the medium of the water supply. He also states that the second reason given by your advisor, namely, "presence in water of decaying stumps, weeds, grasses, and other refuse of vegetable origin cannot give origin to any of the diseases which we know are water borne" is not in accordance with the generally accepted opinion. "For instance there is decided evidence that diarrhoea, colic, and those forms of illness known under the name of 'summer complaints' may be caused by the fermentation and decay of vegetable matter in water. The well-known epidemic of diarrhoea at Long Branch, in the summer of 1887, has always been laid to the accidental introduction of swamp water into the city supply. A late case is Northeast Harbor, Maine. For the past three years, in August, there have been a great many cases of colic and diarrhoea, which, on investigation, seem to be due to the growth and decay of some vegetable matter in the water."

"The best opinion at the present time I think is the one expressed by J. W. Mallet, of the University of Virginia, which is as follows:—'Organic matter of any kind may be harmless at one time, harmful at another, due to the apparent stage of fermentation or putrefaction of the organic matter, and when special organisms have made their appearance or entered on a new phase of existence.'"



"I believe that when the vegetable matter is in a permanent form, not undergoing any marked amount of decomposition, there is comparatively little danger, but when the vegetable matter is undergoing rapid fermentation or decay, as is the case in the water from the Kiekemuit water-shed, as shown by analyses I have made, that there may be considerable danger from the vegetable matter in the water."

Your advisor states that a person suffering from typhoid fever is not likely to go fishing. The Board would like to ask if in his experience he has been able to diagnose the disease of typhoid fever in any patient suffering from that disease before the seventh or ninth day, and if the patient has not remained up and about until the disease has so far advanced that the discomfort of the fever and weakness induced by the production of toxins in the system has so far advanced as to cause him to give up and relinquish his occupation. It is assumed by the medical profession that a period of incubation precedes the disagreeable manifestations of all communicable diseases, and that the period in typhoid fever may be from seven to fourteen days.

If the organisms of the disease are present in the intestine of the person for this period, may they not be deposited with the dejecta upon the shores of the reservoir or into the water? Such persons as are convalescing might find themselves equal to a short fishing excursion near their homes, while not feeling fully able to undertake their usual manual labor. There is no assurance that because a person has recovered from typhoid fever sufficiently to get about that the organisms have ceased to be present and to be generated in the intestines of such a person. By analogy in diphtheria we find that the organism persists in its natural habitat in the person for long periods, without affecting the person who has become immune to their action.

That there are ambulant cases of the disease who are able to go fishing is well known, such cases at times continuing about their usual avocations until a hæmorrhage of the bowels supervenes, producing at times immediate death.

The Board must still maintain that the warm water of condensation is a factor to be considered in the modification of the character of the water at the intake. Although the amount of condensation water is small, perhaps, in comparison with the large amount of water in the reservoir, 72,000,000 gallons, as stated in your report, yet unfortunately the whole contents of the reservoir are not brought into contact with the few gallons of warm water. If the question of dilution is under consideration, the comparison should be made with the number of gallons pumped through the crib at the intake, which is computed at 1,000,000 gallons. But however small the amount of warm water introduced, the opportunity for damage to the supply is greatly favored by the character and form of the crib or strainer at the intake. As you and your advisor are aware, this pile of stones

has acted as a strainer for a sufficiently long period to retain within the interstices of the straining stones sufficient mud and decaying matter to furnish soil for a profuse and luxurious growth of weeds.

Assuming that a solid mass of fecal matter should be retained or held against this crib instead of floating into the intake pipe where it might have been broken up and diluted with a large quantity of water, it is held and the supply is strained through this as well as through the mass of growing and decaying vegetation on the top and at the sides of the crib and may be kept at a high temperature with the influx of the condensation wastes.

It is generally understood, even by the laity, that micro organisms, and especially the pathogenic form, are retarded in their growth in the presence of cold, but thrive with great multiplicity in the presence of a high temperature. The temperature quoted by your advisor, as found at the crib, and at the outlet of the condensation pipe, was 104° Fahrenheit. This is the most favorable temperature for the growth of the bacillus of typhoid fever, and favors the growth of organisms which facilitate the decomposition of vegetable matter.

It must be remembered that this condensation water is being constantly supplied or discharged at the side of the crib while the pumps are in operation, and water is being taken in.

In answer to contention number two, "Even if he (a person suffering or convalescent from typhoid fever) should go fishing, it is not at all necessary or even likely that he would be guilty of any act which would or might infect the water." The Board can only state that at the time of its inspection a mass of human excrement was discovered on the wall of the reservoir at the roadway where the two lower impoundings are separated. This deposit was within eight inches of the edge and could have been washed into the stream at the next heavy rain storm. It may also be stated that the Board is informed from reliable sources that it is a common practice for the inhabitants in and about the town of Warren to repair to the banks of the reservoir on Sundays, for the purpose of fishing, and that they frequently leave fecal matter along the shores.

The confidence of the Board, therefore, in persons having civilized consideration for their fellow beings is not as well established as it appears to be with your advisor.

In reference to the proposition in section 3, "Should infection reach the water through him (any person who would be guilty of infecting the water), it does not by any means follow that it will reach the consumer."

If that statement is correct, it becomes necessary to inquire why the best sanitary engineers recommend the establishment of expensive filtration plants. It surely is not in accordance with the history of epidemics of typhoid fever from polluted streams.

We agree with your advisor that on general principles, access to water used for potable purposes should be denied to all persons having no business there, and while the Board admits that "there is nothing perfect in this world under the works of man," yet a purveyor of a public water supply is supposed to make some reasonable precaution for partial perfection.

There is considerable doubt in the minds of the Board that "the danger of the presence of fishermen on a water-shed is a danger which is inherent in practically every surface water supply in the world." "It must be known to your advisor that the stringent State and local laws are enacted and enforced prohibiting trespassing upon the waters of reservoirs, and even upon the water-shed. The Board can obtain no information showing that this water-shed has received the least attention from the owners or controllers of the supply to prevent trespassing or careless pollution. That it is neglected is evinced by the presence of pigs and cows seen by the members of the Board in the stream, as also the faecal matter from these animals; from the presence of the deposits of human excrement and from the presence, at various points, of old cans, bottles, etc., which indicates that there has been no attempt made to warn anyone from using the reservoir as a dumping ground.

It seems unnecessary to quibble on the use of the word "culinary," for to the average mind of the laity the word culinary, used in this connection, would be considered as synonymous with potable, and it was to the laity that the original communication was directed.

It is unfortunate that your advisor in his description of the water-shed and storage basin did not extend his description to the conditions of vegetable growth on and about the so-called strainer or filter, and that in explaining the capacity of the lower reservoir, which he considers as an average depth of four feet, did not mention that the bottom of the reservoir supporting this water consisted of mud and decaying vegetable matter having a depth of several feet.

In the description of the reservoir he does not describe the character of the bottom, which showed evidence of rank vegetation in places, and in places exposed to air there were decaying masses of weedy growths. It may be possible that, his examination taking place on October 16th, he may have found the shores of the lower reservoirs more fully covered than were found to be at the time of the inspection made by the Board on September 26th. Nor does he mention the large areas of decaying stumps and slimy mud to be found around the exposed edges of the upper reservoir.

Prof. Kinnicutt finds on October 4th the shores to be "lined with low water grass, a large amount of decomposing organic matter, from which gas arises. The growth of vegetable matter on the shores of the reservoir, and in the water near the shores, shows that no care has been taken to remove, as might be done

this source of vegetable contamination. Even immediately around the intake there is decaying vegetable matter, the growth and decay of which is increased by the warm water that comes from condensation water at the pumping station, and which enters the reservoir only a few feet distant from the intake. At the intake is a so-called filter, or strainer, through which the water passes before it enters the pumps, but from the inspection I was able to make I should say that if it had any effect on the water it would be a deleterious one."

Mr. Hering, who visited the water-shed on September 27th, describes the shores as "looking very dirty, with rubbish of different kinds, including tin cans strewn along them. There was also swamp area with characteristic vegetation exposed. No fence existed to keep persons and animals away from the reservoirs. Not far from the upper reservoir is a piggery containing upwards of fifty pigs, the drainage of which goes into the reservoir."

"The conditions of the reservoir bottoms and of their shores were more objectionable than I have ever seen at other places. My general impression, as I saw these works on the two days last autumn, was unfavorable; they appeared to be defective in almost every respect effecting their sanitary . . . value."

The Board is obliged to contend that the conditions of color, odor, taste, and excessive organic matter do have some reference from a sanitary expert's position, inasmuch as these physical characteristics are indications to the chemist and sanitarian of the presence of decaying vegetable or animal matter.

In regard to the chemical and bacteriological examinations, made for your advisor, it must be understood that one examination, whether it be favorable or unfavorable, is of little value in judgment of the future conditions of the supply. An analysis made by Prof. Kinnicutt showed the presence of nitrogen in the state of nitrites in the sample of water taken by him. He also states that his chemical results, as with those shown by Prof. Appleton, contain a large amount of vegetable matter and that this vegetable matter is not in a permanent form, but is undergoing fairly rapid fermentation. It is only by a long series of examinations of a water supply that its variability can be determined.

At the request of your advisor the Board supplied him with all the data which it possessed, showing the results of chemical and bacteriological monthly analyses for three years. A perusal of these figures will show many results indicating a water overcharged with albuminoid and free ammonia, while at other times the amounts are excessive and indicate a water which contains large quantities of decaying vegetable matter.

These poor results maintain for certain periods and go to indicate that the desirable findings shown by your analyses are not permanent.

The statement is made by Prof. Appleton that common salt in the samples in



question may fairly be accounted for by reason of their proximity to the salt water in Narragansett Bay.

Your advisor states "What is now regarded as the best index to the 'Safety' of a water supply is the typhoid fever death rate of the population using such water." While the presence of a high typhoid death rate as existing may be indicative of a contaminated water, yet the absence of the disease, in a given community, is no indicator that that disease may not appear at any moment, if opportunity of contamination is liable to be present. The city of Providence, as has been the case with many other cities, has had immunity from excessive typhoid mortality, and yet a sudden outbreak of the disease calls attention to the fact that the known possibility of contamination from a single case has suddenly been realized. If it is necessary to have high typhoid rates an index before criticizing a water supply and warning the consumers of that supply, the Board does not feel justified in waiting for the production of such an index in order to have positive proof.

Your advisor quotes Dr. Gardner T. Swarts, secretary of the State Board of Health, as supporting his opinion, and calls attention to testimony given by him November 3, 1897, in the case of *Bristol vs. Bristol and Warren Water Company*, showing that at that time his judgment of the water supply and water-shed was favorable. Your advisor also states that he is informed, on disinterested and reliable authority, that the conditions of water and water-sheds have not changed since that time.

It is not necessary to prove that the accumulation by sedimentation of the large quantities of suspended and decaying vegetable matter found in this supply has not increased during a period of five years. The secretary informs the Board that at the time of his visits made in September, 1902, the conditions presented were as entirely different as the evidence given by him in 1897 differs from the report made by the Board and the sanitary experts in 1902.

At the time of his first visit in 1897 the lower reservoirs were full of water, the banks being well covered, and there was no indication of the complete vegetable growth which covered the exposed bottom of the reservoir at the time of his second visit. He does not remember having seen the so-called upper reservoir, having understood that the portion of the lower reservoir above the roadway was the upper reservoir. He did not discover droves of cattle passing through the stream, nor was he shown the piggery either on the stream or at the head of the upper reservoir. It may be that these did not exist at that time; if not, there has been a change in the conditions. It is possible that there has been increase of population in that vicinity during the last five years, and that more people frequent the banks of the lower reservoir than he was informed of at the time of his first visit.

In view of the foregoing evidence, the Board does not feel justified in changing its opinion given to the town of Bristol on October 3d, 1902, and does not feel that it can comply with your request to withdraw the recommendation made to the town of Bristol at that time.

Yours truly,

*State Board of Health of Rhode Island,*

(Signed)

GARDNER T. SWARTS,

*Secretary.*

The following reports are presented here as bearing on the subject, and are mainly what have actuated the Board to insist on its original position, and in view of inspections made by the Board themselves and the results of the regular samples which have been analyzed by this Board, the results of which appear in the body of this report under "Water Supplies."



*Chemical and Bacteriological Examination of Waters from the Bristol and Warren Water Supply, made about this time by H. W. Clark, Chemist to the Massachusetts State Board of Health.*

(Parts in 100,000.)

1902. SEPT. DATE OF	APPEARANCE.			ODOR.		RESIDUE ON EVAPORATION.			AMMONIA.			NITROGEN AS		Oxygen Consumed.	Hardness.	Bacteria per c. c.	B. Coll.	REMARKS.
	Examination.	Turbidity.	Sediment.	Color.	Cold.	Hot.	Total.	Loss on Ignition.	Fixed.	Free.	Total.	In Solution.	In Suspension.					
1	19 20 v. sl.	sl.		.38	Decidedly disagreeable.	Distinctly vegetable.	4.75 2.50 2.25 .0036 .0372 .0292 .0080						.53 .0020 .0001 .59 0.8	0	585	0	Kickemuit upper res. Upper end.	
2	19 20 v. sl.	v. sl.		.52	Distinctly musty, offensive.	Distinctly unpleasant & vegetable.	3.70 2.00 1.70 .0188 .0128 .0356 .0072						.48 .0020 .0001 .66 0.3	0	1115	0	Kickemuit upper res. Draw-off pipe.	
3	19 20 dec. cons.	cons.		.73	Decidedly disagreeable and brackish	Decidedly disagreeable.	5.75 2.25 3.50 .1640 .0570 .0390 .0180						.56 .0060 .0010 .80 1.6	0	465	0	Kickemuit River, $\frac{1}{2}$ mi. below upper res. at road crossing.	
4	19 20 sl.	cons.		.78	Faintly vegetable and unpleasant.	Distinctly unpleasant & aromatic.	7.00 2.75 4.25 .0072 .0472 .0452 .0020						.69 .0030 .0002 1.08 1.7	0	690	0	Kickemuit River, 50 feet below 2 pigs.	
5	19 20 sl.	cons.		.29	Faintly unpleasant.	Distinctly unpleasant.	6.90 2.30 4.60 .0016 .0168 .0144 .0024						.56 .0040 .0003 .30 2.5	0	1380	0	Kickemuit River, $\frac{1}{2}$ mi. above lower res. at Warren road crossing.	
6	19 20 v. sl.	cons.		.63	Decidedly musty.	Distinctly musty.	7.00 3.25 3.75 .0094 .0672 .0452 .0220						1.26 .0020 .0000 .86 1.3	0	185	0	Kickemuit lower res., Upper end.	
7	19 20 v. sl.	v. sl.		.47	Faintly unpleasant.	Distinctly unpleasant.	12.00 2.75 9.25 .0044 .0452 .0392 .0060						4.36 .0010 .0000 .74 2.1	+	685	+	Kickemuit lower res., Intake.	
8	19 20 v. sl.	v. sl.		.47	Faintly unpleasant.	Faintly unpleasant.	12.15 3.50 8.65 .0016 .0384 .0344 .0040						4.12 .0030 .0001 .72 2.1	+	178	+	Main supply, tap.	

## REPORT OF SAMUEL M. GRAY, C. E.

PROVIDENCE, R. I., January 19, 1903.

*To the Water Commissioners of the Town of Bristol, R. I.:*

GENTLEMEN:—In response to your request, made to me in the summer of 1902, to investigate and report the present condition of the water works by which the town of Bristol is supplied with water, the following is presented:

I have visited the works, the reservoirs, and water-shed many times during the last summer, fall, and winter. Among the principal points I would call your attention to, may be mentioned:—

*First.* The exceeding unsanitary condition of the storage reservoirs and stream connecting the same.

During the last season, the water in the upper reservoir was drawn down, so that over 25 acres of the bottom of this reservoir were laid bare. This low stage of water revealed the most filthy, disgusting conditions of a reservoir, from which water is taken for domestic purposes, that I have ever seen. Droppings of animals were to be found in great quantities at many points within the reservoir. Old tin cans, old boots, old clothes, and old bottles without number were scattered about the uncovered shores. Acres of rotting logs, roots, and grass lay exposed to the sun; all of which gave this reservoir a most revolting appearance.

The water was stagnant, and over a large portion of the area was very shallow, and contained great quantities of decaying stumps, roots, moss, and grass, which gave the water a yellow, muddy color, and a disagreeable odor.

The water in the lower or Kickemuit reservoir was also drawn down below high water during most of the summer.

The shores and shallow water bordering the edges of this reservoir contained old bottles, tin cans, rotting sticks, decayed grass, and sometimes human excrement; all of which went to show how utterly this reservoir is neglected, and how unsanitary its condition is.

The water in the lower reservoir, during the summer and fall, was so low that high tide in Mount Hope bay, which is separated from the water in the reservoir only by an earthen dam of doubtful integrity, was higher than the surface of the water in the reservoir. In fact, there are times when tide water is higher than the cap-log of the waste-weir of the dam, and at such times is prevented only by loose planks from freely entering the reservoir. This condition of affairs accounts for a large part of the great amount of chlorine found in the water, particularly during the summer and fall months. This dam had become so dilapidated that some repairs were made to it the past year, but it is only by rebuilding and raising the dam that salt water can be fully prevented from entering the reservoir.

The so-called filter, through which the water is taken that is pumped into the main pipes, was in a filthy condition. This so-called filter is composed of a pile of mud-covered loose stone, of varying sizes, from that of a paving stone to the size of a hen's egg or less. Within this pile of stone is said to be a chamber, or vault, which is covered with rotting planks; into this vault or chamber extends the suction pipe which connects with the pumps. It is not an uncommon sight to see, clinging to the sides of this pile of stones, old bottles, rotting sticks, and other debris, drawn there by the current, which is caused by the draught of water through the stones. Furthermore, the hot water from the condensers of the pumping engines is discharged into the pond not more than 25 feet from the intake. The result is, that this warm, greasy water is taken directly into the suction pipe, and thence pumped into the distributing mains. This condition of affairs is most plainly demonstrated, during cold weather, by the fact that at, and about the end of the pipe entering the pond where the warm water of condensation is discharged, there is no ice, but open water, from which an open channel or waterway extends to the intake pipe; showing most conclusively that the greasy water of condensation, as it is discharged into the pond, goes directly to the intake pipe, and is pumped into the mains.

To remedy this condition of affairs will require an entire remodeling of the intake, and some radical change in the method of disposing of the water of condensation.

Whether the graveyard, which borders a portion of the lower reservoir, is a menace to the purity of the water, cannot perhaps be positively stated. It should not, however, be permitted to be used as a resort for fishermen, as it now is.

In both the upper and in the lower reservoir, soundings were lately made, under my directions, over the entire areas of the reservoirs. These soundings show the mud in the upper reservoir to be from about 6 inches to  $2\frac{1}{2}$  feet in depth, and in the lower reservoir from 2 to 6 feet in depth. The upper layers of mud in both reservoirs, and particularly in the lower one, is of a soft, slimy nature, and contains large amounts of vegetal matter and quantities of gases, which freely rise to the surface of the water on the least stirring of the mud, thus showing that rapid decomposition of organic matter is taking place. The mud in both of these reservoirs should be removed.

The stream in which the water flows from the upper to the lower reservoir is for the greater part of the distance clogged with decaying logs, brush, leaves, grass, and oozy mud. These filthy conditions still further deteriorate the water. To remedy this, the stream should be cleaned of all the debris and mud.

*Second.* Regarding the capacity of the storage reservoirs, and the yield of the

water-shed, I will say, that I have lately had careful soundings made of the depth of the water in these reservoirs. This work was done on the ice, thus enabling me to make reliable measurements of the respective capacity of the two reservoirs. Calculations, based on these measurements, show that the area of the upper reservoir is  $81\frac{6}{10}$  acres instead of 92 acres; and that its capacity is about 152,000,000 gallons instead of 220,000,000, as was claimed by the water company; and that the lower reservoir has an area of only  $52\frac{1}{2}$  acres instead of 55 acres, and a capacity of about 42,000,000 gallons instead of 64,000,000 as per testimony of the water company. If this reservoir had a capacity of 64,000,000 gallons at the time the testimony was given, large amounts of mud must have been deposited in it since that time.

During the low stages of water in the reservoirs, which have occurred the last season, and particularly as related to the upper one, it was found that this reservoir is evidently not fed by springs, and, furthermore, the stream, which, during wet times supplies this basin, was, during the past summer and fall, absolutely dried up, there being no water in it for consecutive weeks, excepting what little trickled in it for a short time after rains. It is only by being able to draw on stored water that any supply at all can be had during very dry times, and as the streams tributary to the reservoirs were practically dry during the last season, it is evident that the yield of water that can be depended upon from the drainage area of the Kickemuit river, so-called, is far less than has been testified to by the water company. The engineer of the water company, who had charge of the construction of the reservoirs, testified that the water-shed would yield 1,000,000 gallons daily per square mile. This would amount to 4,600,000 gallons per day for the entire water-shed. It is safe to say that this water-shed will not yield one-half, and probably not much more than one-third, of this amount during a dry year, with present storage.

*Third.* The amount or depth of water usually carried in the standpipe is far less than has been testified to by the water works company. Observations of the depth of water in the standpipe have been made from time to time during the past year, under my direction. During the time of these observations, there was often no water in the standpipe, and usually not more than from 4 to 6 feet, and at no time, while these observations were being taken, was the standpipe filled with water, as was testified to by the water company.

*Fourth.* The water pipes, aside from cast-iron pipes (of which there are 13,294 feet, and of which 10,694 feet belong to the town of Bristol), including the mains, laterals, and service pipes, are in a much poorer condition as to strength, and less in carrying capacity, than had been known.



Numerous breaks have been reported by the papers to have occurred in the cement lined pipes, of which the main and distributing systems are largely composed. These frequent breaks have shown these cement pipes to be in a very weak and precarious condition. The failures of the pipe have deprived the citizens of Bristol of water for many hours, and even a whole day and night at a time. Had a fire broken out at these times, when the town was deprived of water, it would have been at the mercy of the flames.

During the past two seasons, a system of sewers has been built, consisting of upwards of 9 miles. These sewers will need water for daily flushing; the result will be to materially increase the consumption of water in the town of Bristol. While building the sewerage system, more or less of the service pipes were taken up, and in most cases were found to be badly filled with rust and mud, thus reducing their carrying capacity, besides rendering the water unsuitable for domestic purposes.

RESUMÉ OF THE WORK WHICH SHOULD BE DONE TO IMPROVE AND PUT IN PROPER  
CONDITION THE BRISTOL AND WARREN WATER WORKS:—

The upper and lower reservoirs should be cleaned of the large deposits of mud which they contain; the stumps and roots removed; all old rubbish, such as bottles, tin cans, clothes, boots, etc., picked up; the stream or channel-way connecting the reservoirs should be dug out, removing the decaying vegetal matter and mud which it now contains; and the reservoirs so fenced that horses, cattle, and swine shall not have access to the water, thereby polluting it as they now do.

The dam of the lower reservoir should be raised at least two feet, and rebuilt so as to make it impervious to water, and thus prevent salt water from the bay entering the reservoir.

The raising of the dam will also necessitate raising more or less of the highways bordering on the reservoir, and also the causeway crossing the northerly end of the same. It will doubtless also necessitate obtaining additional flowage rights.

A new standpipe will need to be built to obtain sufficient pressure. An entire new system of street mains, excepting the small portion which is cast-iron, must be laid; and more or less new service pipes will need to be put in.

The intake will also have to be remodeled, and a complete change made in the method of disposing of the water of condensation.

Measures should be taken to remove all causes of pollution, such as piggeries, drainage of barn yards, etc.

It is also imperative that a filter plant be installed to filter the water supplied

to the inhabitants of Bristol, in order, at all times, to insure suitable and safe water for drinking purposes.

Hereunto is appended a diagram showing the amount of chlorine, as given in the tables, testified to in this case by Ernest F. Badger, chemist of the Rhode Island State Board of Health.

Hereunto are also appended photographs, or snap-shots, of the upper reservoir, the stream connecting the reservoirs, piggeries, etc.; all of which were taken within the water-shed of the Kickemuit river during the last year.

Respectfully submitted,

(Signed)

SAMUEL M. GRAY,

*Consulting Engineer.*

#### REPORT OF RUDOLPH HERING, C. E.

I, Rudolph Hering, of the city and State of New York, on oath depose and say that I have been an hydraulic engineer, and sanitary expert for years, and have had much experience with public water works and supplies.

At the request of the town of Bristol, I have examined the Bristol and Warren water works. I made two inspections; one on September 27th, and the other on November 19th, 1902.

I found the conditions as follows:—

§ The supply is taken from the Kickemuit river, having a watershed which scales on the United States' contour map as about 4.6 square miles. At tide level there is a reservoir, called the lower or Kickemuit reservoir; about five miles above it is another reservoir, called the upper reservoir. A pumping station is located at the lower reservoir, where two pumps are installed, said to be lifting 750,000 gallons daily, sometimes one million gallons, into the distribution system. Between Warren and Bristol there is a standpipe. The necessary force, leading and distributing mains complete the works. Two pumps and two boilers are installed (one Russell and one Knowles pump, one upright and one horizontal boiler).

The Knowles pump was not working at either visit, and was said to be not in good condition. I did not examine either pump. The lower reservoir is shallow. On my second visit the water in it was a few inches higher, and exposed less of the bottom and of the stumps. The shores looked very dirty, rubbish of different kinds, including tin cans, was strewn along them. There was also swamp area with characteristic vegetation exposed. No fence existed to keep persons and animals away from the reservoirs. The intake is a pipe led into the reservoir but surrounded by a pile of small stones which I am informed was to act as a filter,



but from the velocity of the water entering it, it could only act as a very coarse strainer.

The exhaust pipe from the pumps discharges into the reservoir a few feet from the intake just mentioned, and the water flowing to the latter and entering the same was quite warm and greasy.

The lower reservoir is created by the building of a dam across the river. As the water level above it is about tide level, this dam was presumably to keep the salt water from Mount Hope bay from getting into the reservoir as well as to hold the fresh water back. At both visits the water in the reservoir at high tide was lower than the level of the salt water. There seemed to be no indication that this condition did not frequently prevail, especially at times of drought. Only an insignificant stream of water was flowing into this reservoir, except on the first visit, when the water was drawn out of the upper reservoir to feed the lower.

Between the two dams the ground was largely overgrown with small vegetation. For the greater part of the distance it was swampy and strewn with rubbish and debris.

The upper reservoir was low at the first visit, showing many stumps, vegetal mould and foul looking shores. At the second visit these conditions were still worse, as the water was much lower. No water was running from the river channel into this reservoir on either occasion. At a few spots some water was oozing out through the mould, but all that I saw would not amount to 500 gallons in twenty-four hours. Cow tracks were abundant along the shore and on the dam. Much of the border was swampy and overgrown with vegetation.

On the west side of the reservoir I walked from the dam to the upper end and on a level about three feet below high-water mark. The exposed shores sloped very gently towards the water, and showed stumps, timber, rubbish, bottles, tin cans, and frequently cow tracks and manure at the water's edge. Not far from the upper reservoir is a piggery containing upwards of fifty pigs, the drainage of which goes into it.

The dam of the lower reservoir appeared to have been recently repaired and to have new hanging gates put in, swinging outward to let fresh water flow out and prevent salt water flowing in. They were not well fitting, and some salt water no doubt still flows in at spring tides. The banks of this dam also leaked in two or three places, which allowed a similar exchange of waters.

I also visited the standpipe about two miles south of Warren. It appeared to me to be about 35 feet high and from 35 to 40 feet in diameter. It is made of even courses of steel plate. On my first visit there was about ten feet of water in this standpipe; I did not determine how much water was in it on the second visit, but there appeared to be less. The plates were flattened and bent in many

places, and showed a number of old leaks at the seams. The foundation masonry was crumbling and in bad condition.

I drove about Bristol sufficiently to get an idea of the distribution system, of which, of course, only the hydrants were visible. These seemed to be in good condition, and sufficiently frequent to protect the city. I am informed that by far the greater part of the pipes are cement lined, and that frequent ruptures occur. I was shown a list of such breaks compiled by the town clerk of Bristol. On account of the evidently frail condition of many of the pipes the company appears to be unable to keep up a high pressure such as the standpipe if filled would give, and such pressure is therefore kept very low.

The quality of the water, as I saw it in the reservoirs on both occasions, was not good. It had an unpleasant odor, taste, and color.

To briefly review the conditions such as I saw, I may state that most of them were not characteristic of a good water supply. The conditions of the reservoir bottoms and of their shores were more objectionable than I have ever seen at other places. Protection against surface pollution even to the extent of erecting fences to keep out cattle, was lacking. The vegetal rubbish, stumps, and swamps were profuse, not to speak of other rubbish and pollution. These objectionable features should be remedied. My general impression as I saw these works on the two days last autumn, was unfavorable. They appeared to be defective in almost every respect, seriously affecting their sanitary and mercantile value.

The pumping station gives the impression that minimum attention is given to it. Only one pump seemed to be in satisfactory condition, and the auxiliary arrangements, such as intake and exhaust, and discharge, were improperly arranged.

The lower reservoir, from which the water was taken, showed surprising carelessness, both in the original preparation of its banks and overflow, failure to remove vegetal matter, crude methods of keeping out salt water, as well as in the present care of the works, with lack of protection against filthy matter entering the water.

The upper reservoir was also in an objectionable condition. Stumps and vegetal mould abounded, and at some seasons discolored the water. Cattle apparently made it a practice to enter the reservoir, and I saw many deposits of cattle dung on the shores and uncovered parts of the bed of the reservoir, and the drainage of a large piggery enters it.

Consistent with the lack of care given the two reservoirs was the negligence shown in keeping the stream within clean banks between the two reservoirs. The standpipe being of weak construction, in its foundation and shell, would not appear to be entirely safe when containing a large amount of water.

The distribution pipe, I am informed, consists largely of cement-lined wrought iron pipe, at least twenty years old, and therefore liable to frequent breaks. Its future use can be only short-lived if experience elsewhere as well as in Bristol with similar pipe is to be a guide.

I believe that in the driest years it would be impracticable with the present storage to supply over one and one-half million gallons a day from the entire water-shed. It is also practicable and decidedly advisable to purify the water by filtration and thus improve its quality and make it suitable for a public water supply. But in addition hereto it will be necessary also to improve the machinery, substitute cast-iron for the cement lined pipes, and build a new standpipe. The hydrants apparently are in a fair condition.

REPORT BY PROF. LEONARD P. KINNICUTT ON INSPECTION OF THE BRISTOL  
AND WARREN WATER SUPPLY TO THE WATER COMMISSIONERS  
OF THE TOWN OF BRISTOL.

I, Leonard Parker Kinnicutt, of the city of Worcester, Massachusetts, on oath depose that since 1887, I have been Director of the Department of chemistry of the Worcester Polytechnic Institute, and that my special work during the past fifteen years has been along the lines of sanitation. I have not only given instruction in this subject during this time, but I have published many papers and articles relating to water and sewage. I have visited and examined numerous water-sheds and water work plants in this country and in Europe, and during the past ten years have visited Europe every other year for the purpose of studying the work that is there being done as regards the purification of water and the treatment of sewage.

At the request of the town of Bristol I have examined the Bristol and Warren works, and with reference to the same have found as follows:

INVESTIGATIONS MADE.

In company with Mr. Gray, of Providence, I made, on October 4th, 1902, a very careful examination of the water-shed of Kickemuit river and the upper reservoir in the town of Swansea, and the lower reservoir in the town of Warren. On November 22, 1902, I made a second examination of the above-named watershed in company with Mr. Gray and Mr. Clark, chemist of the State Board of Health of Massachusetts. On this second occasion I also inspected the standpipe on the east side of the Warren road between Bristol and Warren and visited the town of Bristol. I have also made chemical examinations of the water of the lower reservoir and of the gases given off from the mud at the bottom of the lower reservoir, and also from the mud at the bottom of the upper reservoir.

## THE WATER-SHED OF KICKEMUIT RIVER.

The water-shed of Kikemuit river is comparatively a small water-shed, and though not thickly populated, is a dangerous water-shed, being an absolutely unprotected water-shed, very liable to pollution, with no precautions of any kind being taken to prevent pollution. The above state is shown by the following facts:

The lower reservoir is adjacent to main thoroughfares, the drive along and across the reservoir being called, I believe, the Kickemuit Creek drive. Between the road which passes the cemetery and the reservoir, or Kickemuit Creek as it is called, is a well-trodden path showing that the shore of the creek on this side is at least a much frequented resort. The path, from the numerous cattle droppings, is shown to be used continually by cattle.

The lower reservoir is crossed near the head by a main and much travelled thoroughfare, and no precautions are taken to prevent the water at this point from being polluted in various ways by the numerous passers-by.

The small stream that connects the two reservoirs, called Kickemuit river, is crossed three times by roads, and at one place, at the point where the river is crossed for the second time by a road, is a small piggery, the pigs of which have free access to the stream. At one or more of these crossings travellers drive through the stream and water their horses. There were no signs of any precautions ever having been taken to protect the run of the stream, between the two reservoirs, from pollution.

The upper reservoir, from unmistakable signs, is a resort of fishermen, and near the shore, at one point, is a place which is, or has been, used for clam bakes. There is also a large piggery at the further end of the reservoir which might, under certain conditions, be a serious source of pollution, and the shores of the reservoir are visited by cattle, as is shown by the droppings found on the bank.

As a sign of how little care is taken of the water-shed of Kickemuit river, and what an unprotected shed it is, one has only to visit the shore of the lower reservoir between the dam and the pumping station. Tin cans, empty bottles, and other rubbish is to be noticed along the bank, and there is not one sign or public notice of any kind to be found at this reservoir, the upper reservoir, or by the stream between the same, to call attention to the fact that the water is used as a water supply, not to mention any sign prohibiting boating, fishing, or bathing.

An unprotected water-shed like the above is a constant source of danger, especially when so near such a large community as Warren, and may be the cause of a serious typhoid fever epidemic. As is well known, the fœcal matter from persons suffering from incipient typhoid fever, persons feeling sufficiently well to attend to all the usual occupations of life, contain typhoid bacilli, and it is



from such persons, as well as from those seriously ill, that there is danger of contamination of a water supply. It is not only from the pollution from houses situated on a water-shed that danger is to be feared, but also from camping parties, fishermen, and other frequenters of the locality. A water-shed that is not guarded in every possible way, and constantly inspected, is consequently always dangerous, and to guard against infection from the water of such a water-shed the water should be boiled before using it for drinking-purposes.

Further, though the water-shed, as stated, is rather sparingly populated, it does contain certain houses, the drainage of which might find its way into the reservoirs. I consider as especially dangerous in this respect the house on the Kickemuit Creek road, which is situated near the head of the creek, and only a short distance from where the road crosses the head of the creek.

CHARACTER OF THE LOWER RESERVOIR, UPPER RESERVOIR, AND STREAM BETWEEN  
THE TWO RESERVOIRS.

The lower reservoir, of about 50 acres area, is separated from Mount Hope bay by a dam, and contains a large amount of decomposing vegetable matter, the shores are lined with low-water grass and weeds, and the bottom contains a large deposit of decomposing organic matter from which gas arises. This gas on analysis was found to be a mixture of carbon dioxide, marsh gas, and nitrogen, similar in composition to the gas given off during the putrefaction of animal and vegetable matter under water. The same is true of the gas given off at the upper reservoir, which I have also analyzed.

The dam which separates the lower reservoir from the salt water of Mount Hope bay appears to be inadequate for the purpose. Analyses I have made and analyses made by others show that at all times the water of the lower reservoir contains salt water.

At certain times during the year, from the inspection I have made of the dam, I think that the amount of sea water that might enter the reservoir would be so great as to render the water at the intake unfit for household use.

The growth of vegetable matter on the shores of the reservoir and in the water near the shores shows that no care has been taken to remove, as might be done, this source of vegetable contamination. Even immediately around the intake there is decaying vegetable matter, the growth and decay of which is increased by the warm water that comes from condensation water at the pumping station and which enters the reservoir only a few feet distant from the intake. At the intake is a so-called filter or strainer through which the water passes before it enters the pumps, but from the inspection I was able to make I should say that if it had any effect on the water it would be a deleterious one.

The upper reservoir, made by building a dam across the valley, has an area of about 83 acres. From all appearances, when the reservoir was constructed only the bushes and trees were cut down, and none of the top soil was removed, and the stumps and roots were left in situ.

At the time of my two visits a large portion of the bed of this reservoir was exposed on account of the lowness of the water, the stream supplying the reservoir being dried up and there being apparently few, if any, springs in the bed of the reservoir. Many acres of decaying stumps, roots, weeds, and vegetable matter of various kinds were uncovered and exposed to the sun, and the substances which would be formed by the decay of this matter in the bed of the reservoir would be taken up by the water, when the reservoir again filled with water, and cause pollution of the water supply.

The stream connecting these two reservoirs flows for the most part through low, swampy land. It can hardly be called, or could not at the time of my two visits be called, a stream, but rather a drainage rivulet for the low surrounding land. It was grown over with bushes and weeds and choked with decaying vegetation and muck. The water in its slow passage through this decaying vegetable matter must take up the soluble products of decaying vegetation and carry them into the water of the lower reservoir.

#### ANALYSES OF THE WATER SUPPLIED TO THE TOWNS OF BRISTOL AND WARREN.

Analyses which I have made of the water show that the water is not a good potable water. It would be characterized from the analyses as a water containing the products formed by the putrefaction of vegetable and animal substances, and further contaminated by a certain amount of salt water. Its color, its odor, especially when heated, the large amount of free and albumenoid ammonia it contains, all show that the water is contaminated by organic matter. The amount of free ammonia found is very high for a surface water and shows that the organic matter in the water is not in what is called a permanent state, but rapidly undergoing putrefaction; the same fact is also shown by nitrogen being found in the form of nitrites. This is much more objectionable than as though the organic matter in the water was in a permanent or comparatively stable form.

There is decided evidence that diarrhœa, colic, and those forms of illness known under the name of summer complaints, can be caused by the fermentation and decay of vegetable matter in water. The well-known epidemic of diarrhœa at Long Branch in the summer of 1887 has always been laid to the accidental introduction of swamp water into the city supply.

A late case is North East Harbor, Maine. For the past three years in August



there have been a great many cases of colic and diarrhœa, which seem to be due to the growth and decay of some vegetable matter in the water supply.

The best opinion at the present time, I think, is the one expressed by J. W. Mallet, of the University of Virginia, which is as follows: "Organic matter of any kind may be harmless at one time, harmful at another, due to the apparent stage of fermentation or putrefaction of the organic matter, and when special organisms have made their appearance or entered on a new phase of existence."

I believe that when the vegetable matter is in a permanent form, not undergoing any marked amount of decomposition, there is comparatively little danger; but when the vegetable matter is undergoing rapid fermentation or decay, as is the case in the water from Kickemuit water-shed, as shown by analyses I have made, that there may be considerable danger from the vegetable matter in the water.

A water giving on analysis the results that I have obtained cannot be considered as an unpolluted water, or a suitable water for a town supply, but a water badly contaminated by decomposing vegetable and animal matter. The fact that the water apparently at all times contains a certain amount of salt water also detracts very decidedly from the value of a water as a potable water.

#### CONCLUSIONS DRAWN FROM THE FOREGOING INVESTIGATIONS.

To sum up the conclusions I have reached from my study of the Kickemuit water-shed, the condition of the two reservoirs, and the stream connecting the two reservoirs, and a study and investigation of the water in the lower reservoir, I would state:

*First.* That the water, as delivered to the towns of Warren and Bristol, is not a safe potable water on account of its absolutely unprotected water-shed and the liability, therefore, of the water being, at any time, the cause of a typhoid fever epidemic.

*Second.* That the water, as delivered to the towns of Warren and Bristol, is not a suitable water for a town supply on account of the excessive amount of the products of decomposition of animal and vegetable matter which it contains, which may cause illness and disease.

*Third.* That the water, as delivered to the towns of Warren and Bristol, contains a comparatively large amount of salt, as shown by the amount of chlorides it contains, and there is reason to believe that the amount of salt that it contains may at times become so large as to render the water unpalatable.

*Fourth.* That the water, as delivered to the towns of Warren and Bristol, on account of the decaying vegetable and animal matter at the bottom of the two reservoirs, and in the rivulet connecting the two reservoirs, is liable at times to acquire so strong an odor and taste as to render it unpalatable.

For the reasons I have stated above I consider the water delivered to the towns of Warren and Bristol as a non-potable water, and not a suitable water for a town supply.

WHAT CAN BE DONE TO IMPROVE THE QUALITY OF THE WATER DELIVERED TO THE TOWNS OF WARREN AND BRISTOL?

The quality of the water delivered to the towns of Warren and Bristol might be decidedly improved in the following ways:

By raising and altering the dam at the lower reservoir so as to prevent salt water from entering the reservoir.

By removing as far as possible the muck and decaying vegetable matter from the bottom of the lower reservoir.

By removing the tall grass and weeds on the shore of the lower reservoir.

By guarding the approach to the lower reservoir by surrounding it with a barb wire fence.

By prohibiting boating, bathing, and fishing in the lower reservoir.

By digging a clear definite channel between the two reservoirs, through which the water could flow freely without taking up the decomposing products of vegetable matter.

By removing the muck and vegetable matter, trunks of trees and dead wood from the bottom of the upper reservoir, especially in that portion of the reservoir exposed during the dry seasons.

By prohibiting boating, bathing, and fishing in the upper reservoir, and clam bakes, or picnic parties on the shores of the upper reservoir.

By obtaining control of the land bordering the two reservoirs and the stream connecting them, so that piggeries and other known sources of pollution could be guarded against.

In this way the water, though it would still have considerable color and be liable at times to acquire odor and taste, would be greatly improved, though from the ease of approach to the water-shed it could not even then be considered as perfectly safe water for drinking-purposes. This could only be brought about by the building of a filtration plant to filter the water before it is delivered to the towns of Bristol and Warren.

(Signed) LEONARD P. KINNICUTT,

*Director of the Department of Chemistry, Worcester Polytechnic Institute.*

REPORT OF PROF. LEONARD P. KINNICUTT, REVIEWING THE REPORT OF DR.  
J. L. LEAL TO MR. SAMUEL M. GRAY ON BEHALF OF THE WATER  
COMMISSIONERS OF THE TOWN OF BRISTOL.

WORCESTER POLYTECHNIC INSTITUTE,

WORCESTER, MASS., Dec. 24, 1902.

A partial review of Dr. J. L. Leal's report to Mr. Geo. H. Norman, on the action of the State Board of Health of Rhode Island, in advising the boiling of the water, delivered to the towns of Bristol and Warren.

*Samuel M. Gray, Esq., Sanitary and Consulting Engineer, Providence, R. I.:*

MY DEAR SIR:—At your request, I have carefully read the report of Dr. J. L. Leal, and present the following statement, giving my opinion on certain portions of that report.

The report of Dr. J. L. Leal, made to George H. Norman, giving the result of his investigations as to the quality of the water supplied to the towns of Bristol and Warren, takes up the following questions:—

*First.* Does the communication of the State Board of Health give sufficient reason for the radical action taken?

*Second.* What are the actual conditions of the water, the reservoirs, the tributaries, and the water-sheds with reference to any possible danger to the health of those using said water?

*Third.* What is your opinion as to conditions found, of water, reservoirs, tributaries, and water-sheds with reference to any danger to the health of persons using said water?

*Fourth.* Do the conditions found, in your opinion, in any way justify the action of the State Board of Health?

In answering the first question, "Does the communication of the State Board of Health give sufficient reason for the radical action taken?" Dr. Leal divides the reasons as follows:—

*First.* Access to water by cattle and pigs; *Second*, Presence in water-shed of fishing parties; *Third*, Presence in water and on banks of decaying stumps, weeds, grasses and other such refuse; *Fourth*, Discharge into the intake reservoir of the water of condensation from the pumping station, *Fifth*, Excess of chlorine in the water shown by chemical analysis and due to leaking into reservoir of sea water, and excess of ammonia due to organic matter.

In his reply to the first reason he states, "We know of no disease conveyed to men through water by cattle or pigs." This is not correct. For instance, is not tape-worm a disease, and can it not be, and is it not, conveyed to man through water?

In his reply to the second reason he states, "Presence in water of decaying stumps, weeds, grasses and other refuse of vegetable origin cannot give origin to any of the diseases which we know are water born." His reply is not in accordance with the generally accepted opinion. For instance, there is decided evidence that diarrhœa, colic, and those forms of illness known under the name of summer complaints, can be caused by the fermentation and decay of vegetable matter in water. The well-known epidemic of diarrhœa at Long Branch in the summer of 1887, has always been laid to the accidental introduction of swamp water into the city supply.

A late case is North East harbor, Maine. For the past three years in August, there have been a great many cases of colic and diarrhœa, which, on investigation, seem to be due to the growth and decay of some vegetable matter in the water.

The best opinion at the present time I think is the one expressed by J. W. Mallet, of the University of Virginia, which is as follows:—"Organic matter of any kind may be harmless at one time, harmful at another, due to the apparent stage of fermentation or putrefaction of the organic matter, and when special organisms have made their appearance or entered on a new phase of existence."

I believe that when the vegetable matter is in a permanent form, not undergoing any marked amount of decomposition, there is comparatively little danger, but when the vegetable matter is undergoing rapid fermentation or decay, as is the case in the water from Kickemuit water-shed, as shown by analyses I have made, that there may be considerable danger from the vegetable matter in the water.

In his reply to the third reason, Dr. Leal says that the condensation water would soon be cooled by the 72 millions gallons of water in the reservoir. I would say that it is not a question of being cooled by the 72 million gallons of water; that it does not mix with any large amount of water before it enters the intake pipe, that it does cause a rise of temperature in the water near the intake, increasing the growth and decay of the vegetable matter at that point, and giving conditions, as regards temperature, favorable to the multiplication of bacteria at that point.

In his reply to the fourth reason, Dr. Leal does not deny that fœcal matter is a source of danger, but contends that a person suffering from typhoid fever or convalescing from it is not likely to frequent the water-shed.

I would reply that the fœcal matter of persons with incipient fever, persons not sufficiently ill to give up any of their usual occupations, contains the typhoid bacilli, and on a water-shed so near a town as large as Warren, where absolutely no precautions are used against pollution, the danger from fishermen, picnic parties, etc., is very much greater than is usually the case.

Further, in respect to the statement that practically every surface water supply in the world is liable to contamination from fishermen, I would call attention to



the fact that a great many, if not the majority, of surface water supplies are taken from "Impounded Reservoirs," where fishing, bathing, boating, and picnicing are prohibited.

The second question that the report deals with is, "What are the actual conditions of the water, the reservoirs, the tributaries, and the water-shed with reference to any favorable danger to the health of those using said water for potable purposes." My opinion of the water, the reservoirs, the tributaries and the water-shed is radically different from that of Dr. Leal, and is given in my preliminary report to Hon. Francis Colwell, a copy of which I enclose.

As to the chemical examination made by Prof. Appleton, I would say that though the results obtained by him differ somewhat from mine, I believe they show, as did my results, that the water contains a large amount of vegetable matter and that this vegetable matter is not in a permanent form, but is undergoing fairly rapid fermentation.

I do not agree with the second, third, and sixth statements made by Dr. Appleton, and according to my analyses, the conclusions reached in the fourth statement are not applicable, as I find nitrogen in the state of nitrites in the water, and further, I do not understand the conclusions drawn up under "finally."

The amount of salt in the water, I believe, is due to the entrance of salt water from Mount Hope bay into the reservoir, and not to the nearness of the reservoir to salt water.

I consider the amount of free and albuminoid ammonia as excessive for a pure surface water. I consider the color as excessive for a pond water surrounded by trees, and believe it is caused by decaying vegetation in the water. I believe that a sparsely or densely populated water-shed has nothing to do with the color of a surface water. A surface water containing very large quantities of sewage, if it does not contain decaying vegetable matter, is generally without color and that a surface water containing absolutely no sewage, but containing large amounts of vegetable matter, will be highly colored.

In his conclusions under "Finally" Prof. Appleton states that "none of the substances mentioned or present can of themselves be called specially injurious. Mineral matters in moderate quantities like those found here, organic matter, common salt, free and albuminoid ammonia, nitrogen as nitrites and nitrates, color, are none of them especially objectionable in a drinking-water."

No one thinks that free or albuminoid ammonia, nitrogen as nitrites and nitrates, or color are injurious to health in larger quantities than they ever occur in the most polluted waters. They are, as found in water, not injurious in themselves, and their occurrence or non-occurrence in a water is only of importance because they are the products by the putrefaction and decomposition of vegetable and animal matter. From the amount of these substances found in analy-

zing a water, conclusions can be drawn as to the amount of vegetable and animal matter which has undergone fermentation and the amount which remains in the water still to undergo fermentation.

The amounts found in the water of the lower reservoir show, in my opinion, that the water contains too large an amount of organic matter in a state of fermentation for the water to be considered a good potable water.

As to the part of the report on the bacteria in the water, I do not care, as yet, to make any statement, as I have not, up to the present time, made any bacterial examination of the water. I would, however, call attention to one or two statements in Prof. Gorham's report. I do not understand what Prof. Gorham means when he says, "One or two counts run high from the *variable amounts of vegetable matter found*." Further, the statement "even if the common *B. coli* had been positively identified, however, it would be insignificant in consideration of the fact that some of the best authorities believe that the *B. coli* is present in the great majority of water supplies and does not necessarily indicate pollution."

This, I would say, refers to some work described at the last meeting of the Bacteriological Society, at Chicago, a year ago. At the present time it has not been sufficiently substantiated to have much weight.

The statements made under the "Typhoid fever death rate as an index to the purity of a water supply," are hard to follow. I do not think sufficient data are given to draw any conclusions. What is necessary is to know the death rate for 100,000 of the population of Warren and Bristol, during the past ten years.

Further, if the death rate should be found to be low it is no argument against advising precautions being taken with water obtained from an unpolluted watershed.

I do not wish the above statement to be considered as a reply to Dr. Leal's report. It is only a partial review of the report made at your request.

Yours respectfully,

(Signed)

LEONARD P. KINNICUTT.



Analyses of gas given off from the mud at the bottom of the lower and upper reservoirs in the Kickemuit water-shed.

No. 1. Gas collected on south side of intake pier, lower reservoir, six feet from shore.

No. 2. Gas collected on north side of intake pier, lower reservoir.

No. 3. Gas collected at the upper end of upper reservoir, depth of water at point where gas was collected, two feet.

No. 4. Gas collected at a point on Kickemuit river, below the upper reservoir, on the north side of the road leading to Swansea factory.

RESULTS GIVEN IN PERCENTAGES.

	1.	2.	3.	4.
Carbon dioxide.....	0.4	0.9	3.2	2.5
Oxygen.....	2.5	3.8	1.5	0.8
Marsh gas.....	47.8	47.2	60.1	60.3
Nitrogen.....	49.3	48.1	35.2	32.9

These gases are very similar in composition to the gases that I have analyzed, given off from the mud of badly polluted streams and ponds, especially gases marked 3 and 4, and show the foul condition of the bottom of a stream or pond.

Respectfully submitted,

(Signed)

LEONARD P. KINNICUTT,

*Director of the Chemical Dept.*



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FIFTIETH REPORT

RELATING TO THE

REGISTRY AND RETURN

OF

Births, Marriages, and Deaths,

AND OF DIVORCE,

IN THE

STATE OF RHODE ISLAND,

FOR THE

*YEAR ENDING DECEMBER 31, 1902.*

PREPARED BY

GARDNER T. SWARTS, M. D.

STATE REGISTRAR OF VITAL STATISTICS; SECRETARY OF THE STATE BOARD OF HEALTH;  
COMMISSIONER OF PUBLIC HEALTH.

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1904.

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---

GARDNER T. SWARTS, *Secretary.*

## State of Rhode Island and Providence Plantations.

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PROVIDENCE, R. I., February 1, 1904.

*To the Honorable the General Assembly:*

The fiftieth Annual Report upon the Registration of Births, Marriages, and Deaths in Rhode Island, and including judicial procedure in relation to divorce, during the year 1902, with compendary tables of the results of registration in the previous years, is herewith respectfully submitted.

The plan of the preceding years, in regard to the general arrangement of the tables, summaries, and comments, has been followed in this report, except that Table IX of the yearly report of causes of deaths has been re-adjusted to conform to the nomenclature of the so-called Bertillon system.

While this classification does not reach a perfection which may be desired by all registrars, it has been adopted in order that it may be in conformity with the registration reports of all other principal cities and States having a system of registration. It also places the report in conformation with the registration reports of Canada and other foreign countries, which have agreed to adopt this system at this time.

In the special tables the object has been to present the important facts of many years of registration, as well as of single years, in such manner as to make them readily apparent and relieve the reader of the statistics of much of the labor of personal examination of each of the general tables of the preceding reports for the purpose of ascertaining the relation the various facts bear to each other.

Respectfully,

GARDNER T. SWARTS,

*State Registrar.*



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REPORT UPON THE REGISTRATION  
OF  
BIRTHS, MARRIAGES, AND DEATHS  
IN  
RHODE ISLAND,  
FOR  
THE YEAR ENDING DECEMBER 31, 1902,  
AND  
FOR VARIOUS YEARS FROM 1853 TO 1902,  
INCLUSIVE.

TABLE I.

*General Summary of Births and Marriages in the State of Rhode Island during the year 1902.*

TOWNS AND DIVISIONS OF THE STATE.	BIRTHS.							MARRIAGES.				
	Whole Number.	SEX.		PARENTAGE.				Whole Number.	NATIVITY.			
		Males.	Females.	Native.	Foreign.	Native Father. Foreign Mother.	Foreign Father. Native Mother.		Native.	Foreign.	Native Groom. Foreign Bride.	Foreign Groom. Native Bride.
Barrington .....	25	12	13	7	11	2	2	8	7	.....	1	.....
Bristol .....	147	75	72	60	53	17	17	49	21	16	9	3
Warren .....	174	83	91	38	103	19	14	37	9	16	7	5
BRISTOL COUNTY.....	346	170	176	105	170	38	33	94	37	32	17	8
Coventry .....	158	84	74	66	57	15	20	27	24	1	1	1
East Greenwich .....	56	29	27	24	23	4	5	23	18	4	.....	1
West Greenwich .....	7	5	2	7	.....	.....	.....	1	1	.....	.....	.....
Warwick .....	707	368	339	181	353	72	101	217	71	88	26	32
KENT COUNTY.....	928	486	442	278	433	91	126	268	114	93	27	34
Jamestown .....	12	7	5	3	8	1	.....	14	10	1	2	1
Little Compton .....	41	18	23	21	16	1	3	6	5	.....	.....	1
Middletown .....	26	12	14	6	18	1	1	9	8	1	.....	.....
Newport City .....	537	289	248	192	247	48	50	178	95	47	17	19
New Shoreham .....	17	8	9	14	1	2	.....	8	8	.....	.....	.....
Portsmouth .....	43	21	22	19	19	2	3	11	7	.....	3	1
Tiverton .....	73	37	36	22	37	11	3	18	15	1	.....	2
NEWPORT COUNTY.....	749	392	357	277	346	66	60	244	148	50	22	24
Burrillville .....	168	91	77	59	61	18	30	58	30	15	6	7
CENTRAL FALLS .....	545	268	277	94	324	57	70	152	32	67	26	27
Cranston * .....	285	145	140	100	133	28	15	82	52	11	8	11
Cumberland .....	214	109	105	54	96	32	32	65	27	15	10	13
East Providence .....	262	148	114	119	93	27	23	96	68	10	11	7
Foster .....	13	3	10	11	.....	.....	.....	12	5	1	2	4
Glocester .....	28	18	10	22	3	1	2	5	4	.....	1	.....
Johnston .....	98	55	43	16	71	4	7	11	4	3	3	1
Lincoln .....	282	164	118	34	189	31	25	75	12	33	14	16
North Providence .....	60	34	26	17	30	7	6	4	2	1	1	.....
North Smithfield .....	54	28	26	17	24	6	7	13	4	4	3	2
PAWTUCKET .....	959	507	452	287	429	129	114	366	132	100	69	65
PROVIDENCE CITY .....	4,719	2,366	2,353	1,423	2,444	422	429	2,041	890	725	212	214
Scituate .....	58	31	27	42	7	7	2	15	13	1	1	.....
Smithfield .....	51	29	22	23	20	3	5	10	4	.....	1	5
WOONSOCKET .....	1,006	529	477	175	596	113	122	305	96	90	55	55
PROVIDENCE COUNTY.	8,802	4,525	4,277	2,502	4,520	886	894	3,310	1,375	1,085	423	427
Charlestown .....	16	8	8	12	2	1	1	12	7	4	1	.....
Exeter .....	3	2	1	3	.....	.....	.....	7	6	.....	1	.....
Hopkinton .....	33	14	19	27	2	2	2	20	17	2	.....	1
Narragansett .....	32	14	18	25	4	1	2	8	8	.....	.....	.....
North Kingstown .....	66	31	35	49	6	6	5	39	33	1	3	2
South Kingstown .....	75	41	34	61	1	6	7	38	31	1	4	2
Richmond .....	19	8	11	13	2	2	2	7	7	.....	.....	.....
Westerly .....	158	85	73	62	69	12	15	89	62	12	7	8
WASHINGTON COUNTY	402	203	199	252	86	30	34	220	171	20	16	13

\* State institutions not included.

TABLE I.—Continued.

*General Summary of Deaths in the State of Rhode Island during the year 1902.*

## DEATHS.

Whole Number.	SEX		NATIVITY.		AGES GIVEN.		AGGREGATE AGE IN YEARS.		AVERAGE AGE IN YEARS.		Aggregate Ages.	Average Age.
	Males.	Females.	Native.	Foreign.	Males.	Females.	Males.	Females.	Males.	Females.		
29	14	15	21	8	14	15	727	851	51.93	56.73	1,578	54.41
122	65	57	88	34	65	57	2,551	2,282	39.25	40.04	4,833	39.61
99	50	49	64	35	49	49	1,990	1,653	40.61	33.73	3,643	37.17
250	129	121	173	77	128	121	5,268	4,786	41.16	39.55	10,054	40.88
96	44	52	82	14	44	52	1,478	1,869	33.59	35.94	3,347	34.86
52	29	23	38	14	29	23	1,206	1,270	41.59	55.22	2,476	47.62
12	6	6	9	3	6	6	263	375	43.83	62.50	638	53.17
385	213	172	291	94	213	172	6,576	5,304	30.87	30.84	11,880	30.86
545	292	253	420	125	292	253	9,523	8,818	32.61	34.85	18,341	33.65
23	11	12	22	1	10	12	393	571	39.30	47.58	964	43.82
16	9	7	13	3	9	7	487	411	54.11	58.71	898	56.13
16	5	11	14	2	5	11	115	401	23.00	36.45	516	32.25
424	199	225	315	109	199	222	6,877	9,332	34.56	42.04	16,209	38.50
20	12	8	17	3	12	8	535	469	44.58	58.62	1,004	50.20
33	16	17	32	1	16	17	447	494	27.91	29.06	941	28.52
76	39	47	59	17	28	47	984	1,337	35.14	28.45	2,321	30.95
608	281	327	472	136	279	324	9,838	13,015	35.26	40.17	22,853	37.90
106	55	51	76	30	55	51	1,492	1,740	27.13	34.12	3,232	30.49
287	142	145	192	95	142	145	3,182	3,356	22.41	23.14	6,538	22.78
186	98	88	150	36	98	88	3,537	3,630	36.09	41.25	7,167	38.53
151	77	74	88	63	77	74	3,051	2,580	39.62	34.86	5,631	37.29
171	90	81	135	36	90	80	3,966	3,153	44.07	39.41	7,119	41.88
27	10	17	25	2	10	17	639	964	63.90	56.71	1,603	59.37
25	16	9	23	2	16	9	890	440	55.63	48.89	1,330	53.20
58	27	31	42	16	27	31	969	1,194	35.89	38.51	2,163	37.29
141	76	68	87	57	75	68	1,793	2,292	23.91	33.71	4,085	28.57
50	31	19	37	13	31	19	721	746	32.26	39.26	1,467	29.34
27	15	12	21	6	15	12	440	420	29.33	35.00	860	31.85
737	349	388	483	251	349	388	11,728	14,781	33.60	39.00	26,509	35.97
3,394	1,717	1,677	2,358	1,036	1,717	1,677	56,691	59,099	33.02	35.24	115,790	34.12
74	38	36	60	11	38	36	1,807	1,940	47.55	53.89	3,747	50.64
35	20	15	31	4	20	15	779	570	38.95	38.00	1,349	38.54
546	286	260	345	201	286	260	6,905	7,096	24.14	27.29	14,001	25.64
6,018	3,047	2,971	4,153	1,865	3,046	2,970	98,590	104,001	32.37	35.02	202,591	33.68
21	12	9	26	1	12	9	735	503	61.25	54.78	1,238	58.95
5	4	1	5	.....	3	1	220	68	73.33	68.00	288	72.00
32	15	17	30	2	15	17	747	960	49.80	56.47	1,707	53.34
19	11	8	17	2	11	8	429	257	39.00	44.63	786	41.37
52	28	24	46	6	28	24	1,675	1,218	59.82	50.75	2,893	55.63
63	31	32	58	5	31	32	1,596	1,829	51.48	57.15	3,425	54.37
27	17	10	26	1	17	10	876	532	51.53	53.20	1,408	52.15
93	49	44	70	23	49	44	2,438	2,219	49.76	50.43	4,657	50.08
312	167	145	272	40	166	145	8,716	7,686	52.51	53.01	16,402	52.57

TABLE I.—Continued.—RECAPITULATION.

*General Summary of Births and Marriages in the State of Rhode Island  
during the year 1902.*

COUNTIES.	Whole Number.	BIRTHS.						Whole Number.	MARRIAGES.			
		SEX.		PARENTAGE.					NATIVITY.			
		Males.	Females.	Native.	Foreign.	Native Father. Foreign Mother.	Foreign Father. Native Mother.		Native.	Foreign.	Native Groom. Foreign Bride.	Foreign Groom Native Bride.
BRISTOL.....	346	170	176	105	170	38	33	94	37	32	17	8
KENT.....	928	486	442	278	433	91	126	268	114	93	27	34
NEWPORT.....	749	392	357	277	346	66	60	244	148	50	22	24
PROVIDENCE.....	8,802	4,525	4,277	2,502	4,520	886	894	3,310	1,375	1,085	423	427
WASHINGTON.....	402	203	199	252	86	30	34	220	171	20	16	13
STATE INSTITUTIONS.....												
WHOLE STATE.....	11,227	5,776	5,451	3,414	5,555	1,111	1,147	4,136	1,845	1,280	505	506



TABLE 1.—Concluded.--RECAPITULATION.

*General Summary of Deaths in the State of Rhode Island, by Counties,  
during the year 1902.*

DEATHS.												
Whole Number.	SEX.		NATIVITY.		AGES GIVEN.		AGGREGATE AGE IN YEARS.		AVERAGE AGE IN YEARS.		Aggregate Ages.	Average Age.
	Males.	Females.	Native.	Foreign.	Males.	Females.	Males.	Females.	Males.	Females.		
350	129	121	173	77	128	121	5,268	4,786	41.16	39.55	10,054	40.38
545	292	253	420	125	292	253	9,523	8,818	32.61	34.85	18,341	33.65
608	281	327	472	136	279	324	9,838	13,015	35.26	40.17	22,853	37.90
6,018	3,047	2,971	4,153	1,865	3,046	2,970	98,590	104,001	32.37	35.02	202,591	33.68
312	167	145	272	40	166	145	8,716	7,686	52.51	53.01	16,402	52.57
222	126	96	117	105	125	96	6,583	5,144	52.66	53.58	11,727	53.06
7,955	4,042	3,913	5,607	2,348	4,036	3,909	138,518	143,450	34.32	36.70	281,968	35.49

TABLE II—BIRTHS, 1902.

*Arranged by Months, Sexes, and Divisions of the State.*

MONTHS.	SEX.	DIVISIONS OF THE STATE.											
		Whole State.											
			Bristol County.	Kent County.	Newport County Towns.	Newport City.	Providence County Towns.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Washington County.	
January. . . . .	Males . . . .	496	17	30	8	42	73	22	44	185	58	17	
	Females..	461	20	49	7	37	51	19	45	186	29	18	
	Total.....	957	37	79	15	79	124	41	89	371	87	35	
February. . . . .	Males . . . .	422	13	38	6	21	57	19	30	185	42	11	
	Females..	417	13	38	13	18	42	25	34	179	35	20	
	Total.....	839	26	76	19	39	99	44	64	364	77	31	
March.....	Males . . . .	490	17	34	9	18	57	15	48	214	50	28	
	Females..	472	14	43	6	29	63	25	45	189	43	15	
	Total.....	962	31	77	15	47	120	40	93	403	93	43	
April. . . . .	Males . . . .	449	9	31	6	15	73	25	42	189	41	18	
	Females..	392	12	28	7	14	54	18	24	187	36	12	
	Total.....	841	21	59	13	29	127	43	66	376	77	30	
May.. . . . .	Males . . . .	445	15	32	8	27	74	22	36	180	39	12	
	Females..	401	13	32	8	13	38	25	28	190	34	20	
	Total.....	846	28	64	16	40	112	47	64	370	73	32	
June.....	Males . . . .	478	22	42	8	21	73	18	39	205	29	21	
	Females..	463	23	31	9	14	69	19	29	198	50	21	
	Total.....	941	45	73	17	35	142	37	68	403	79	42	
July. . . . .	Males . . . .	487	10	48	9	16	73	27	39	201	53	11	
	Females..	473	5	43	5	10	75	26	43	201	42	23	
	Total.....	960	15	91	14	26	148	53	82	402	95	34	

TABLE II.—BIRTHS.—Concluded.

*Arranged by Months, Sexes, and Divisions of the State.*

MONTHS.	SEX.	DIVISIONS OF THE STATE.										
		Whole State.	Bristol County.	Kent County.	Newport County Towns.	Newport City.	Providence County Towns.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Washington County.
August. ....	Males ...	544	12	46	8	26	81	25	48	223	47	28
	Females.	489	19	34	13	15	64	18	54	208	48	16
	Total....	1,033	31	80	21	41	145	43	102	431	95	44
September...	Males ...	460	11	52	9	23	72	19	38	182	42	12
	Females.	484	14	34	9	21	70	23	42	208	48	15
	Total....	944	25	86	18	44	142	42	80	390	90	27
October. ....	Males ...	540	21	57	10	20	74	26	60	205	50	17
	Females.	466	15	34	13	22	63	22	30	213	39	15
	Total....	1,006	36	91	23	42	137	48	90	418	89	32
November...	Males ...	482	13	31	17	26	73	25	40	204	34	19
	Females.	465	16	47	10	24	71	27	39	184	37	10
	Total....	947	29	78	27	50	144	52	79	388	71	29
December ...	Males ...	483	10	45	5	34	75	25	43	193	44	9
	Females.	468	12	29	9	31	58	30	39	210	36	14
	Total....	951	22	74	14	65	133	55	82	403	80	23
Whole State.	Males ...	5,776	170	486	103	289	855	268	507	2,366	529	203
	Females.	5,451	176	442	109	248	718	277	452	2,353	477	199
	Total....	11,227	346	928	212	537	1,573	545	959	4,719	1,006	402

TABLE III.—PLURALITY BIRTHS.—1902.

Arranged by Months, Sexes, and Divisions of the State; and showing the Nativity of the Parents.

MONTHS.	SEX.	Number of Cases.	Number of Children.	DIVISIONS OF THE STATE.					NATIVITY OF THE PARENTS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
				Bristol County.	Kent County.	Newport County.*	Newport City.	Providence County †	Providence City.	Washington County.	American.	Austrian.	English.	French Canadian.	German.	Irish.	Italian.	Polish.	Portuguese.	Roumanian.	Russian.	Swedish.	American and British American.	American and English.	American and Finnish.	American and French Canadian.	German.	Irish.	American and Russian.	English and Irish.	French Canadian and American.	Irish and English.	Irish and French Canadian.	Scottish and English.	American.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
January . . . . .	Males . . . . . Females . . . . .	17 19	15 19	2	4	...	2	7	...	8	8	...	1	...	...	...	1	3	...	1	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Not including Newport city.

† Not including Providence city.

TABLE IV.—MARRIAGES, 1902.

*Arranged by Months and Divisions of the State.*

MONTHS.	Whole State, 1902.	DIVISIONS OF THE STATE.										Whole State, 1901.
		Bristol County.	Kent County.	Newport County Towns.	Newport City.	Providence County Towns.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Washington County.	
January. ....	326	9	22	3	12	36	13	32	149	40	10	339
February. ....	266	1	12	2	13	35	5	27	141	21	9	287
March. ....	178	2	7	6	9	21	2	14	95	10	12	125
First Quarter. ....	770	12	41	11	34	92	20	73	385	71	31	751
April. ....	434	13	27	5	18	49	21	38	218	26	19	392
May. ....	274	5	30	3	7	31	9	23	124	28	14	254
June. ....	490	15	25	10	22	54	23	46	245	20	30	517
Second Quarter. ....	1,198	33	82	18	47	134	53	107	587	74	63	1,163
July. ....	303	9	16	5	13	27	10	29	162	22	10	294
August. ....	297	8	17	3	23	29	15	22	145	23	12	264
September. ....	403	6	29	7	18	44	14	30	195	35	25	343
Third Quarter. ....	1,003	23	62	15	54	100	39	81	502	80	47	901
October. ....	446	10	28	11	12	51	13	42	220	36	23	375
November. ....	506	12	41	4	24	46	24	46	241	34	34	444
December. ....	213	4	14	7	7	23	3	17	106	10	22	212
Fourth Quarter. ....	1,165	26	83	22	43	120	40	105	567	80	79	1,031
Whole Year. ....	4,136	94	268	66	178	446	152	366	2,041	305	220	3,846

## TABLE V.—DEATHS, 1902.

*Arranged by Months, Sexes, and Divisions of the State.*

MONTHS.	SEX.	Whole State.	DIVISIONS OF THE STATE.										
			Bristol County.	Kent County.	Newport County Towns	Newport City.	Providence County Towns.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Washington County.	State Institutions.
January . . . .	Males. . . . .	336	6	17	5	17	51	11	26	134	30	19	20
	Females. . . .	329	16	20	12	22	32	8	28	144	31	16	...
	Total. . . . .	665	22	37	17	39	83	19	54	278	61	35	20
February. . . .	Males. . . . .	314	5	18	7	13	40	11	27	148	18	19	8
	Females. . . .	328	6	16	9	23	37	9	35	157	18	13	5
	Total. . . . .	642	11	34	16	36	77	20	62	305	36	32	13
March, . . . . .	Males. . . . .	339	11	18	6	19	51	7	37	144	21	16	9
	Females. . . .	341	10	22	7	15	46	10	39	148	27	13	4
	Total. . . . .	680	21	40	13	34	97	17	76	292	48	29	13
April. . . . .	Males. . . . .	329	10	28	5	16	54	10	21	140	23	15	7
	Females. . . .	319	5	16	9	18	42	9	32	135	31	13	9
	Total. . . . .	648	15	44	14	34	96	19	53	275	54	28	16
May. . . . .	Males. . . . .	342	14	24	2	15	46	10	34	144	25	12	16
	Females. . . .	295	9	18	7	18	36	17	24	119	23	15	9
	Total. . . . .	637	23	42	9	33	82	27	58	263	48	27	25
June. . . . .	Males. . . . .	272	8	13	3	14	34	11	19	139	15	7	9
	Females. . . .	276	11	18	8	18	41	13	35	101	15	13	3
	Total. . . . .	548	19	31	11	32	75	24	54	240	30	20	12
July. . . . .	Males. . . . .	361	12	25	6	14	43	12	36	152	44	11	6
	Females. . . .	351	11	20	9	12	40	15	35	161	27	9	12
	Total. . . . .	712	23	45	15	26	83	27	71	313	71	20	18



TABLE V.—DEATHS, 1902.—Concluded.

*Arranged by Months, Sexes, and Divisions of the State.*

MONTHS.	SEX.	DIVISIONS OF THE STATE.											State Institutions.
		Whole State.	Bristol County.	Kent County.	Newport County Towns.	Newport City.	Providence County Towns.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Washington County.	
August . . . . .	Males. . . . .	383	13	30	13	17	51	14	33	151	35	17	9
	Females. . . . .	384	14	33	10	18	48	14	35	163	23	14	12
	Total. . . . .	767	27	63	23	35	99	28	68	314	58	31	21
September . . . . .	Males. . . . .	357	11	35	15	19	57	14	33	123	24	17	9
	Females. . . . .	313	6	24	13	28	49	12	24	123	13	12	9
	Total. . . . .	670	17	59	28	47	106	26	57	246	37	29	18
October. . . . .	Males. . . . .	330	13	33	8	20	47	11	26	140	12	9	11
	Females. . . . .	292	10	22	5	15	44	9	22	121	18	10	16
	Total. . . . .	622	23	55	13	35	91	20	48	261	30	19	27
November . . . . .	Males. . . . .	307	7	24	4	16	43	9	20	143	17	14	10
	Females. . . . .	299	9	17	6	16	37	13	41	135	13	6	6
	Total. . . . .	606	16	41	10	32	80	22	61	278	30	20	16
December. . . . .	Males. . . . .	372	19	27	8	19	36	22	37	159	22	11	12
	Females. . . . .	386	14	27	7	22	49	16	38	170	21	11	11
	Total. . . . .	758	33	54	15	41	85	38	75	329	43	22	23
Whole year. . . . .	Males. . . . .	4,042	129	292	82	199	553	142	349	1,717	286	167	126
	Females. . . . .	3,913	121	253	102	225	501	145	388	1,677	260	145	96
	Total. . . . .	7,955	250	545	184	424	1,054	287	737	3,394	546	312	222

TABLE VI.—DEATHS, 1902.

*Exhibiting the Whole Number, the Proportion to Population, and Number of each Sex, in every Town and Division of the State.*

TOWNS AND DIVISIONS OF THE STATE.	Total Deaths.	Population, 1902, geometrically estimated.	Deaths per 1,000 of population.	DEATHS.	
				SEX.	Number of each Sex.
Barrington.....	29	1,083	26.8	Males.....	14
				Females....	15
Bristol.....	122	7,252	16.8	Males.....	65
				Females....	57
Warren.....	99	5,260	18.8	Males.....	50
				Females....	49
BRISTOL COUNTY.....	250	13,595	18.4	Males.....	129
				Females....	121
Coventry.....	96	5,345	18.0	Males.....	44
				Females....	52
East Greenwich.....	52	2,720	19.1	Males.....	29
				Females....	23
West Greenwich.....	12	576	20.8	Males.....	6
				Females....	6
Warwick.....	385	22,201	17.3	Males.....	213
				Females....	172
KENT COUNTY.....	545	30,842	17.7	Males.....	292
				Females....	253
Jamestown.....	23	1,747	13.2	Males.....	11
				Females....	12
Little Compton.....	16	1,137	14.0	Males.....	9
				Females....	7
Middletown.....	16	1,533	10.4	Males.....	5
				Females....	11
NEWPORT CITY.....	424	22,670	18.7	Males.....	199
				Females....	225
New Shoreham.....	20	1,417	14.1	Males.....	12
				Females....	8
Portsmouth.....	33	2,146	15.4	Males.....	16
				Females....	17

TABLE VI.—DEATHS, 1902.—Continued.

*Exhibiting the number of Deaths in each Period of Life, in every Town and Division of the State.*

Under 1 year.	PERIODS OF LIFE.															Age unstated.
	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	
1	.....	.....	.....	.....	.....	.....	1	2	1	.....	2	3	3	1	.....	...
2	.....	.....	.....	.....	.....	.....	1	1	.....	1	.....	2	4	4	.....	...
16	2	2	.....	1	.....	1	1	3	5	3	7	11	7	5	1	...
12	2	1	.....	.....	.....	2	.....	8	5	1	5	7	9	4	1	...
11	.....	.....	1	1	.....	1	1	3	5	4	7	4	8	2	1	1
14	3	.....	1	1	1	.....	.....	3	5	7	.....	3	6	4	1	...
28	2	2	1	2	.....	2	3	8	11	7	16	18	18	8	2	1
28	5	1	1	1	1	2	1	12	10	9	5	12	19	12	2	...
14	4	1	.....	.....	.....	1	2	1	.....	3	1	7	5	3	2	...
11	2	2	1	.....	5	.....	2	2	1	3	6	6	8	3	.....	...
8	1	.....	.....	.....	.....	2	.....	.....	1	2	3	6	2	3	1	...
2	.....	.....	.....	.....	.....	1	.....	1	2	1	5	2	5	4	.....	...
1	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	1	2	.....	.....	...
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	1	2	.....	1	...
70	13	4	4	5	4	6	1	13	11	11	10	19	26	15	1	...
53	12	2	3	1	5	2	3	16	10	9	12	12	11	18	3	...
93	18	5	4	5	4	9	4	14	13	16	14	33	35	21	4	...
66	14	4	4	1	10	4	5	19	13	13	24	21	26	25	4	...
3	1	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	3	.....	.....	1
2	.....	.....	.....	.....	1	.....	.....	1	1	.....	.....	3	2	2	.....	...
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	2	1	2	.....	...
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	1	2	.....	...
2	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	1	.....	.....	...
3	.....	.....	.....	.....	1	1	.....	1	.....	1	1	.....	.....	3	.....	...
38	9	5	3	.....	3	4	11	17	23	15	21	22	22	6	.....	...
40	10	4	.....	1	5	3	6	18	19	13	15	24	35	24	5	3
3	.....	.....	.....	.....	.....	.....	.....	1	1	1	1	2	2	1	.....	...
.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	2	1	1	2	.....	...
7	1	.....	1	.....	.....	.....	.....	.....	1	.....	1	3	.....	2	.....	...
7	.....	.....	.....	1	.....	.....	1	2	1	.....	.....	.....	3	2	.....	...

TABLE VI.—DEATHS, 1902.—Continued.

*Exhibiting the Whole Number, the Proportion to Population, and Number of each Sex, in every Town and Division of the State.*

TOWNS AND DIVISIONS OF THE STATE.	Total Deaths.	Population, 1902, geometrically estimated.	Deaths per 1,000 of population.	DEATHS.	
				SEX.	Number of each Sex.
Tiverton.....	76	3,017	25.2	Males.....	29
				Females....	47
NEWPORT COUNTY.....	608	33,667	18.1	Males.....	281
				Females....	327
Burrillville.....	106	6,392	16.6	Males.....	55
				Females....	51
CENTRAL FALLS.....	287	18,891	15.2	Males.....	142
				Females....	145
Cranston.....	186	12,091	15.4	Males.....	98
				Females....	88
Cumberland.....	151	8,957	16.9	Males.....	77
				Females....	74
East Providence.....	171	12,851	13.3	Males.....	90
				Females....	81
Foster.....	27	1,114	23.7	Males.....	10
				Females....	17
Glocester.....	25	1,340	18.7	Males.....	16
				Females....	9
Johnston.....	58	3,837	15.1	Males.....	27
				Females....	31
Lincoln.....	144	9,037	15.9	Males.....	76
				Females....	68
North Providence.....	50	3,195	15.6	Males.....	31
				Females....	19
North Smithfield.....	27	2,258	11.9	Males.....	15
				Females....	12
PAWTUCKET.....	737	41,408	17.8	Males.....	349
				Females....	388
PROVIDENCE CITY.....	3,394	186,294	18.2	Males.....	1,717
				Females....	1,677

TABLE VI.—DEATHS, 1902.—Continued.

*Exhibiting the number of Deaths in each Period of Life, in every Town and Division of the State.*

PERIODS OF LIFE.																	Age unstated.
Under 1 year.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Age unstated.	
7	3	....	....	....	1	2	....	2	1	1	1	3	3	3	1	1	
16	1	4	2	1	1	....	1	1	3	1	4	6	1	3	2	...	
62	14	5	4	....	4	7	11	20	27	19	26	33	32	14	1	2	
69	11	8	2	3	8	4	8	25	24	15	24	35	43	38	7	3	
19	3	....	1	....	4	....	3	1	6	2	4	6	4	1	1	...	
11	3	1	....	....	5	1	2	1	4	5	2	9	3	3	1	...	
57	8	6	....	2	7	4	2	9	8	5	13	10	9	2	....	...	
53	10	5	1	....	4	3	5	14	10	9	10	9	7	5	....	...	
20	8	3	3	....	2	1	1	8	7	4	10	16	6	7	2	...	
22	4	2	2	....	....	1	....	3	6	3	12	11	9	12	1	...	
17	1	1	1	1	....	1	1	6	8	4	14	9	9	3	1	...	
16	2	3	2	3	1	1	1	4	8	4	10	7	3	8	1	...	
18	1	....	....	....	1	1	2	8	3	10	8	16	16	5	1	...	
15	2	2	1	2	2	....	2	5	9	5	8	12	9	6	....	1	
....	....	1	....	....	....	....	....	....	....	....	2	1	5	....	1	...	
1	....	....	....	1	1	....	....	1	....	....	1	5	6	....	1	...	
2	....	....	1	....	....	....	....	....	1	1	....	4	6	1	....	...	
2	....	....	....	....	....	....	....	....	2	....	....	2	2	1	....	...	
9	1	1	....	....	....	....	....	....	1	1	5	7	2	....	....	...	
6	3	1	....	....	1	....	....	1	3	2	3	4	4	3	....	...	
34	1	1	1	1	3	4	1	2	3	4	3	8	4	4	1	1	
15	5	5	....	1	....	....	....	7	5	6	8	5	5	5	1	...	
13	2	....	1	....	....	....	1	3	....	3	5	2	....	1	....	...	
2	2	....	....	....	....	....	1	2	1	4	1	4	1	1	....	...	
5	1	....	....	1	....	....	....	2	....	1	3	....	1	1	....	...	
4	1	1	....	....	....	....	....	....	....	....	2	1	3	....	....	...	
103	18	3	4	3	7	3	5	23	20	25	41	39	37	17	1	...	
71	21	8	5	2	12	7	12	23	32	33	30	51	56	24	1	...	
403	82	36	18	10	38	19	42	151	163	183	208	159	147	54	4	...	
358	73	25	31	13	41	29	46	140	153	141	172	182	178	76	19	...	

TABLE VI.—DEATHS, 1902.—Continued.

*Exhibiting the Whole Number, the Proportion to Population, and Number of each Sex, in every Town and Division of the State.*

TOWNS AND DIVISIONS OF THE STATE.	Total Deaths.	Population, 1902, geometrically estimated.	Deaths per 1,000 of population.	DEATHS.	
				SEX.	Number of each Sex.
Scituate .....	74	3,346	22.1	Males.....	38
				Females ....	36
Smithfield.....	35	2,004	17.5	Males.....	20
				Females ....	15
WOONSOCKET .....	546	29,488	18.5	Males.....	286
				Females ....	260
PROVIDENCE COUNTY .....	6,018	342,503	17.6	Males.....	3,047
				Females ....	2,971
Charlestown.....	21	993	21.1	Males.....	12
				Females ....	9
Exeter.....	5	822	6.1	Males.....	4
				Females ....	1
Hopkinton.....	32	2,565	12.5	Males.....	15
				Females ....	17
Narragansett.....	19	1,554	12.2	Males.....	11
				Females ....	8
North Kingstown.....	52	4,082	12.7	Males.....	28
				Females ....	24
South Kingstown.....	63	5,168	12.2	Males.....	31
				Females ....	32
Richmond.....	27	1,482	18.2	Males.....	17
				Females ....	10
Westerly .....	93	7,731	12.0	Males.....	49
				Females ....	44
WASHINGTON COUNTY .....	312	24,397	12.8	Males.....	167
				Females ....	145
STATE INSTITUTIONS .....	222	2,418	91.8	Males.....	126
				Females ....	96



TABLE VI.—DEATHS, 1902.—Continued.

*Exhibiting the number of Deaths in each Period of Life, in every Town and Division of the State.*

PERIODS OF LIFE.																Age unstated
Under 1 year.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	
3	....	1	....	....	....	1	....	7	2	4	5	6	6	3	....	...
4	....	....	....	....	1	....	2	2	2	3	3	2	9	7	1	...
7	....	....	....	....	....	1	....	....	....	1	5	1	3	2	....	...
5	....	....	....	....	....	....	1	1	....	2	1	2	2	....	1	...
96	16	10	8	4	13	11	10	22	7	15	24	21	21	6	2	...
78	21	5	8	4	7	3	4	26	15	12	19	31	19	7	1	...
806	142	63	38	22	75	46	68	242	229	263	350	305	276	107	14	1
663	147	58	50	26	75	45	76	230	250	229	282	337	316	158	28	1
...	....	1	....	....	....	....	....	....	2	1	1	....	3	4	....	...
1	....	....	....	....	....	....	....	1	1	....	1	1	2	2	....	...
...	....	....	....	....	....	....	....	....	....	....	1	....	....	2	....	1
...	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	...
1	1	....	....	....	....	....	1	1	2	1	....	5	1	2	....	...
4	....	....	....	....	....	....	....	....	....	....	1	4	5	2	1	...
1	....	....	....	1	....	....	....	3	....	2	....	3	1	....	....	...
2	....	....	....	....	....	1	....	....	....	1	....	2	....	2	....	...
...	....	1	....	....	....	....	....	2	2	2	4	6	6	4	1	...
4	....	....	....	....	1	....	....	1	....	2	5	4	3	3	1	...
6	....	....	....	....	....	1	....	2	1	....	2	7	8	4	....	...
2	....	1	....	....	1	....	....	1	4	2	2	6	4	9	....	...
...	2	....	....	....	....	....	1	1	1	2	3	1	4	2	....	...
...	1	1	....	....	....	....	....	1	....	....	2	....	3	1	1	...
7	1	....	....	....	....	....	....	5	3	4	7	7	9	6	....	...
5	1	....	....	1	1	....	1	3	3	4	2	7	10	5	1	...
...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	...
15	4	2	....	1	....	1	2	14	11	12	18	20	32	24	1	1
18	2	2	....	1	3	1	1	7	8	9	13	25	27	24	4	...
...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	...
3	....	....	....	....	....	1	2	9	13	24	26	19	16	11	1	1
3	3	....	....	....	....	....	2	7	11	10	16	15	20	9	....	...

TABLE VI.—DEATHS, 1902.—Continued.

(RECAPITULATION.)

*Exhibiting the Whole Number, the Proportion to Population, and Number of each Sex, in every Division of the State.*

TOWNS AND DIVISIONS OF THE STATE.	Total Deaths.	Population, 1902, geometrically estimated.	Deaths per 1,000 of population.	DEATHS.	
				SEX.	Number of each sex.
BRISTOL COUNTY .....	250	13,595	18.4	Males.....	129
				Females. ...	121
KENT COUNTY.....	545	30,842	17.7	Males.....	292
				Females....	253
NEWPORT COUNTY.....	608	33,667	18.1	Males.....	281
				Females....	327
PROVIDENCE COUNTY.....	6,018	342,503	17.6	Males.....	3,047
				Females....	2,971
WASHINGTON COUNTY.....	312	24,397	12.8	Males.....	167
				Females....	145
STATE INSTITUTIONS.....	222	2,418	91.8	Males.....	126
				Females....	96
WHOLE STATE.....	7,955	447,422	17.8	Males.....	4,042
				Females....	3,913

TABLE VI.—DEATHS, 1902.—Concluded.

(RECAPITULATION.)

*Exhibiting the number of Deaths in each Period of Life, in every Division of the State.*

Under 1 year.	PERIODS OF LIFE.															Age unstated.
	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	
28	2	2	1	2	....	2	3	8	11	7	16	18	18	8	2	1
28	5	1	1	1	1	2	1	12	10	9	5	12	19	12	2	..
93	18	5	4	5	4	9	4	14	13	16	14	33	35	21	4	..
66	14	4	4	1	10	4	5	19	13	13	24	21	26	25	4	..
62	14	5	4	....	4	7	11	20	27	19	26	33	32	14	1	2
69	11	8	2	3	8	4	8	25	24	15	24	35	43	38	7	3
806	142	63	38	22	75	46	68	242	229	263	350	305	276	107	14	1
663	147	58	50	26	75	45	76	230	250	229	282	337	316	158	28	1
15	4	2	....	1	....	1	2	14	11	12	18	29	32	24	1	1
18	2	2	....	1	3	1	1	7	8	9	13	25	27	24	4	..
3	....	....	....	....	....	1	2	9	13	24	26	19	16	11	1	1
3	3	....	....	....	....	....	2	7	11	10	16	15	20	9	....	....
1,007	180	77	47	30	83	66	90	307	304	341	450	437	409	185	23	6
847	182	73	57	32	97	56	93	300	316	285	364	445	451	266	45	4

TABLE VII.—CAUSES OF DEATH, 1902.

Arranged Alphabetically; showing the Number of each Sex who died from each cause, in each month and in the whole year 1902; also the Number of Native-born and Foreign-born, and also the Number of Native and of Foreign Parentage, from each cause, for the year.

CAUSES OF DEATH.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY		PARENT-AGE.		SEX.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Am.	For.	M.	F.
Abscess of Brain.....		1	1									1						1	1			1				4	2	1	5	3	3
Kidney.....													1													1		1			1
Liver.....											1		1													2		1	1		2
Lung.....												1	1				1	1					1			1	3		4	2	2
Neck.....							1																			1		1		1	1
Ovary.....								1																			2		2		2
Pelvis.....									1				2			1										3	1	3	1		4
Perineum.....				1																								1		1	
Prostate.....							1																					1		1	1
Multiple, of Body.....																1										1			1		1
Multiple, of Scalp.....																1										1			1		1
Accidents,* Asphyxia.....		2	3	1	1	1			2		2			1		1			1			2		6	3	18	9	12	15	18	9
Bicycle.....													1															1		1	1
Burns and Scalds.....		2	2			3		3	3	3	1			1		1		1	1	3		1	4	5	1	25	9	9	25	12	22
Drowning.....		6	1	2		2		5		1		4		7		6	1	4		2		2	1	3		26	21	12	35	44	3
Electric Car.....		1				1		1		2			2		1		1		1							4	6	3	7	10	
Electric Shock.....							1						1													2	1	2	1	2	1
Elevator.....							1						1					1				1					4		4	3	1
Explosion of Dynamite.....																		1									1		1		1

\* See table LXI of this report.

TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.				PARENT-AGE.		SEX.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Am.	For.	Am.	For.	M.	F.		
Accidents, Exposure.....	2																						2	1	4	1	3	2	4	1		
Falls.....	5	2	3	2	3	3	1	6	2	4	2	7	3	8	1	3	2	2	4	1	2	4	1	45	29	35	39	49	25			
Firearms.....																							2		2	...	1	1	2	1		
Insolation.....														1	2								2		3	...	2	1	2	1		
Machinery.....	1																1						1		4	3	1	6	7	...		
Poison.....														1	1	1	2	1		1			1	6	3	4	5	5	4			
Railroad.....	3		3		2	1	2		4		9		2		5		5		2		1		6	27	18	18	27	44	1			
Various.....			2		3		1		6		1	2		8		1	2	4		5		5	2	1	26	19	19	26	40	5		
Addison's Disease.....																							...	1	...	1	...	1	...			
Adenoid Vegetations.....																							...	2	...	1	1	1	2	...		
Alcoholism.....	7		2		1		2		4		2		3		2		1	5	2	2	6		...	23	16	10	29	36	3			
Anemia.....					1	2											1		2		1		...	3	4	1	6	4	3			
Pernicious.....							2	2	1	1					1		1	1	1		3		3	11	6	10	7	4	13			
Aneurism of Aorta.....			1														2						...	3	...	1	2	1	2			
Angina Pectoris.....	1	2	1	1	2	2	2	3		2	1	3		1	3		1	2	2		2	1	2	...	28	7	25	10	23	12		
Apoplexy.....	8	14	2	12	6	7	8	11	8	12	7	4	4	11	5	10	14	7	7	11	10	5	6	20	132	77	116	93	85	124		
Appendicitis.....	2		3		5	1	3	1	1	2	2	3	3	2	4	6	3	1			5		3	1	39	12	22	29	34	17		
Asthma.....	1			1		1	1			1	1				1	1	2	2		1	1		1	8	7	8	7	7	8			
Atelectasis, Pulmonum.....	1	2	1		2	1				1											1	2	1	13	...	5	8	6	7			
Atheroma of Arteries.....																		1	2		...	1	...	2	3	2	3	1	4			
Brain, Congestion of.....			2								1							2		1		...	...	1	8	3	5	6	6	5		
Softening.....	2	1	2	1	1		2	1	1												1	1	...	1	9	5	8	6	9	5		
Bronchitis, Acute.....	10	10	12	15	12	13	12	7	13	10	2	5	4	1	2	3	2	3	5	7	5	10	18	27	172	36	64	144	97	111		
Chronic.....	2	3	1	3	2	2	3	4	1	2	1	1			2	1	3	2	1	6	1	5	3	2	22	27	22	29	20	31		

TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Am.	For.	Am.	For.
Calculi, Renal.....	1				1																				2	...	2	...	2	...
Cancer of Abdominal Viscera.....		1	1			2			1	1															6	...	6	...	2	4
Bladder.....					2				1						2										4	2	4	2	4	2
Breast.....	5	9	4		5	8		1	3		1				2	5	4	5	1					1	39	13	32	20	...	52
Cervical Glands.....																								1	1	1	1	1	1	1
Chin.....					1																				1	1	1	1	1	1
Colon.....								1																	1	...	1	...	1	...
Duodenum.....											1														1	...	1	...	1	...
Esophagus.....	1										1														...	2	...	2	...	...
Face.....	1		2		1	1	1		1		1		1		2	1	1	2						9	5	9	5	12	2	...
Gall, Bladder.....		1																						2	...	2	...	1	1	1
Gall Duct.....							1																	1	...	1	...	1	...	1
Groin.....									1																1	...	1	...	1	...
Inguinal Gland.....						1																			...	1	...	1	...	1
Intestine.....	1	2	1		1	2	1	1		1					1	2		1	...					1	10	7	10	7	8	9
Jaw.....							1													1				1	1	1	1	1	2	...
Kidney.....											1	1			1									1	3	1	3	1	3	1
Larynx.....																								2	1	2	1	2	1	3
Lip.....			1																					1	1	...	2	...	2	...
Liver.....	1	6	2	2	1	4	1	2	1	1	4		3	2	1	3	2	2	1				2	29	16	26	19	21	24	...
Lung.....	1																							1	1	1	1	1	1	2
Mediastinal Gland.....			1																					1	1	...	1	...	1	...
Mesentery.....															1									1	3	...	3	...	2	1
Nose.....																								1	1	...	1	...	1	...



TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.		Jan.												Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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\* Not otherwise placed.

TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.					
	M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
Childbirth, Post-partum Hemorrhage.....																1							1				2		2					
Pulmonary Embolism.....	1																										1		1					
Puerperal Nephritis and Eclampsia.....	1		2		4		2		2		1		4		2																			
Puerperal Peritonitis.....	1						1											2		1							6		6					
Puerperal Septicæmia.....	4		4		4		1		1		1		1		1			1		4		2		3			11	7	19					
Chlorosis.....																											1		1					
Cholera Infantum.....	3	1					2	1	3	3	8	7	58	43	71	53	40	31	17	14	5	2			33	31	114	248	205	157				
Morbus.....														1	3	1	1										4	1	7	5				
Colitis (under 2 years).....													1	1					1	2							7		3	3				
Enteritis (under 2 years).....	1	1	1	1	1	1	1	2	4	2	4	2	8	5	7	10	13	7	8	6	2	2	3	2			85	2	35	52	48	39		
Colitis (over 2 years).....													1					3									3	4	5	2	2			
Enteritis (over 2 years).....	1		1		1						1	2	4	4	2	4	3	1			1						17	9	10	16	14	12		
Convulsions of Children.....	2	2	3	2	2	2	4	2	2		2		1	4	2	1	2	1	1	1	1	1	2	1	41			17	24	21	20			
Croup (without membrane)...	1	1	3		1	2		1		1		1	1	1				1									18		5	13	8	10		
Cystitis.....	2	6			1		2		2		3		1		2		1				1	3					3	1	19	9	16	12	26	2
Debility, Congenital.....	3	3	4	1	5	6	9	3	4	2	3	1	4	1	6	4	9	3		5	4	6	6	2	93	1	43	51	57	37				
Asphyxia Neonatorum.....	2				2						1		2				1	1	1		1						11		2	9	10	1	1	
Difficult Labor.....	1	1	1	3	3		1		1		2		2		2		2				2	1						23		11	12	14	9	
Injury at Birth.....	1				2		1				1		1				1				2							8	4	7	5			
Premature Birth.....	3	3	3	2	13	4	6	8	11	6	8	3	4	8	5	7	7	6	4	6	11	9	7	12	156			60	96	82	74			
Diabetes.....	2		1	2	2		1				1	6		1	1		1				1							11	8	10	9			
Mellitus.....	1	3	2		1		2	4		2		4	1		2		1	1										21	11	18	14	12	20	

TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diphtheria .....	7	6	5	5	1	6	4	7	3	2	3	2	1	4	3	1	5	8	1	5	12	5	4	9	94	15	44	65	49	60	
Membranous Croup .....	3	4	4	4	1	1	1	1	2	1	1	1	1	1	2	1	1	3	3	2	6	2	2	3	37	2	11	28	15	24	
Dysentery .....	1	1	1	1	2	1	1	2	1	1	3	12	12	19	19	11	17	10	6	1	1	1	2	89	32	39	82	58	63		
Embolism, Cerebral .....	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	4	1	4	1	1	5		
Pulmonary .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Encephalitis .....	2	2	3	1	1	1	1	1	3	1	1	1	1	1	2	1	1	1	1	1	1	2	1	2	16	3	5	14	8	11	
Endocarditis, Acute .....	3	2	2	1	4	1	1	1	1	2	1	1	1	1	2	1	1	2	1	1	1	1	1	1	12	19	10	21	21	10	
Enteritis (under 2 years) .....	2	1	4	3	1	1	1	1	1	4	3	2	6	10	5	8	1	4	6	3	3	1	2	70	1	16	55	31	40		
Gastro (under 2 years) .....	2	1	2	1	3	1	1	1	1	1	2	4	12	6	11	9	4	9	7	4	2	2	2	82	2	30	54	45	39		
Enteritis (over 2 years) .....	4	1	1	3	1	1	1	3	1	4	2	1	2	5	5	9	6	6	1	2	2	2	3	47	18	25	40	25	40		
Gastro (over 2 years) .....	1	1	2	2	3	3	3	1	2	2	2	2	4	4	4	6	2	8	1	2	1	1	1	36	12	27	21	17	31		
Epilepsy .....	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	14	6	10	10	11	9		
Erysipelas .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	3	3	1		
Arm .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Foot .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Head .....	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	6	4	3	7	5	5		
Leg .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1		
Shoulder .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Phlegmonous .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Fibroid of Uterus .....	1	1	1	3	1	3	1	3	2	1	2	1	4	1	1	1	1	1	1	1	1	1	3	14	4	10	8	1	18		
Fibroma of Ovary .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Fistula in Ano .....	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	2	3	3	4	2		
Urethra .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Gallstones .....	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	6	6	5	7	4	8		

TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.			Feb.			Mar.			Apr.			May.			June.			July.			Aug.			Sept.			Oct.			Nov.			Dec.			NATIVITY.		PARENT-AGE.		SEX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	M	F	E.	M	F	E.	M	F	E.	M	F	E.	M	F	E.	M	F	E.	M	F	E.	M	F	E.	M	F	E.	M	F	E.	M	F	E.	Am.	For.	M.	F.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Gangrene of Foot.....																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Gastritis.....	2	3	1	1	3	2	2	4	1	2	4	1	2	1	4	1	2	3	5	4	8	25	35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1</

\* Not otherwise placed.

TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Am.	For.	M.	F.	
Hydrocephalus .....	1	...	...	...	2	1	2	1	1	...	...	...	1	...	2	2	...	...	...	...	...	2	...	...	15	...	9	6	8	7	
Icterus .....	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	
Neonatorum .....	1	3	...	...	1	1	1	1	1	...	...	1	1	...	...	...	1	2	...	...	...	...	...	13	...	5	8	9	4	...	
Idiocy .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	
Impetigo Contagioso .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	
Indigestion (under 3 months) .....	1	2	3	3	1	2	...	1	2	...	1	...	1	2	3	2	3	...	8	3	1	2	2	3	45	1	24	22	26	20	
Acute (over 3 months) .....	1	1	4	2	4	...	1	4	1	1	1	3	1	1	1	...	1	...	2	1	1	2	...	1	30	4	16	18	18	16	
Influenza .....	3	1	1	2	2	9	4	4	2	1	1	...	...	...	...	...	...	...	...	...	1	...	3	3	22	15	17	20	17	20	
Insanity* .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	
Dementia .....	1	...	...	...	...	1	1	...	1	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	4	2	3	3	4	2	
Mania, Acute .....	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	1	1	...	2	
Mania, Chronic .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Melancholia .....	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	1	1	2	...	1	...	5	2	4	3	5	2	
Intestinal Diseases* .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	
Obstruction .....	1	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	3	5	2	
Fecal Impaction .....	3	...	...	...	1	2	...	1	1	...	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Intussusception .....	2	1	...	...	2	1	...	...	...	...	...	...	3	1	1	...	...	...	2	...	2	...	1	...	12	4	10	6	9	7	
Kidney Diseases* .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	
Bright's Disease .....	13	9	9	11	10	6	9	4	6	8	9	11	7	1	6	9	5	2	9	7	16	8	10	5	120	70	94	96	109	81	
Acute .....	...	...	1	1	...	...	...	...	1	...	1	...	1	...	...	1	1	...	...	...	...	...	...	...	...	6	3	5	4	6	3
Nephritis .....	8	9	7	14	13	14	16	11	10	11	10	11	7	12	9	13	9	11	10	10	15	10	15	9	149	117	98	168	136	130	
Acute .....	1	3	1	...	3	2	...	1	4	...	...	4	4	1	1	3	9	5	3	3	1	1	5	5	34	26	25	35	32	28	
Pyelonephrosis .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...	3	2
Uremia .....	1	...	1	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...	3	2	

\* Not otherwise placed.



TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Laryngitis .....	1	1									1										1	1	1	1	5	1	2	4	3	3	
Leukemia .....											1				1							1		1	1	3	4	2	2	2	
Liver Diseases* .....	1												1											7	3	6	4	4	6	5	
Atrophy, Acute Yellow .....																	2	2	1			1		4	30	29	5	...	...	24	
Cirrhosis of .....	3	4	2	2	3	2	2	2	3	1	4	1	4	3	2	2	7	2	2		3	1	4		5	...	22	37	35	5	
Congestion of .....										1	1						2					1			5	...	2	...	...	24	
Enlargement of .....	1									1					1									1	2	5	...	2	...	5	
Hypertrophy of .....																1								1	1	1	1	1	1	1	
Sclerosis of .....																								1	...	1	...	...	...	1	
Locomotor Ataxia .....												1	1				2	1			1	1	1	1	6	6	6	6	7	5	
Malaria .....											1	1	3	1	2	1	1				1				6	7	2	11	6	7	
Malarial Fever .....														2						2					4	2	3	3	2	4	
Malassimilation .....	9	8	6	5	5	4	2	5	8	5	5	5	7	8	9	9	14	10	8	12	6	4	6	6	162	4	85	81	85	81	81
Improper Feeding .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				1				5	...	3	2	4	1	
Malformations,* Congenital .....																			3						7	...	5	2	5	2	
Imperforate Anus .....														1	1	1			1		1				6	...	2	4	5	1	
Cleft Palate .....														1											2	...	...	...	2	2	...
Encephalocoele .....														1											2	...	...	...	...	...	1
Foramen Ovale Patent .....	3	1	3	2	1	1	2	1	3	3	1	1	1	1	1	2	1	1	1	1	1	1	2		29	...	16	13	16	13	
Head .....																		1							1	...	...	...	...	...	1
Heart .....	2	2												2					2	2	1		1		15	...	6	9	6	9	
Spina Bifida .....													1												7	...	1	6	3	4	4
Mastoiditis .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1	2	5	5	2	2	
Measles .....	5	4	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	3		23	2	5	20	17	8	

\* Not otherwise placed.



TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Meningitis.....	3	9	3	5	7	11	6	9	6	3	5	6	9	4	6	11	6	2	4	3	4	7	5	1	123	12	50	85	64	71
Cerebro-Spinal.....	..	..	1	..	2	1	1	1	4	3	3	3	1	3	..	2	..	1	1	1	..	..	3	1	28	4	15	17	16	16
Spinal.....	1	..	1	1	1	..	2	1	..	2	..	1	..	..	2	..	3	1	1	1	1	3	1	23	1	12	12	13	11	
Metritis.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
Metrorrhagia.....	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	1	2	..	3	..	3
Morpinism.....	..	..	..	..	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	1
Myelitis.....	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	2	1	..	1	2
Myocarditis.....	1	..	..	..	1	1	..	..	1	..	1	..	1	1	2	..	1	2	1	..	1	1	1	9	5	8	6	8	6	
Necrosis of Ilium.....	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	1	..	1	..
Jaw.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1
Neurasthenia.....	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1
Neuritis, Multiple ..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	2	..	2	..	..	1	1
Noma.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	1	..	2	1	1
Old Age.....	10	17	10	17	11	11	9	9	7	10	5	13	9	18	11	9	5	15	6	7	9	15	8	20	153	108	148	113	100	161
Ophthalmia Neonatorum.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1	..	1	..	1
Orchitis.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	1	..	1	..	1	..	1
Osteoma of Ilium.....	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1
Ovarian Cyst.....	..	..	2	..	1	2	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	3	5	3	5	..	8	..
Pancreatitis.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	1	..	1
Paralysis.....	2	3	2	3	2	3	3	2	2	3	3	5	2	3	5	2	4	1	1	2	1	1	1	4	32	22	26	28	23	31
Agitans.....	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1	2	1	2	1
Bulbar.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	1	1
General, of the Insane.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	12	3	9	6	10	5	
Infantile.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1	1	1	1	1



TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.				PARENT-AGE.				SEX.	
	M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		Am.		For.		Am.		For.		M. F.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Am.	For.	Am.	For.	Am.	For.	M.	F.		
Rheumatism, Acute.....	1	1	2	3	3	1	1	4	3	1	1	1	5	3	3	2	1	1	1	1	1	2	1	2	24	15	17	22	22	17				
Chronic.....			1	1					1				1											1	2	5	3	4	4	4				
Sarcoma of Axilla.....																1								1	1	1	1	1	1	1				
Breast.....											1													2	2	2	1	1	1	2	2			
Frontal Bone.....															1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	2			
Intestine.....																1								1	1	1	1	1	1	1	2			
Jaw.....			1																					1	1	1	1	1	1	1	1	1		
Leg.....																1								1	1	1	1	1	1	1	1	1		
Liver.....								1																1	1	1	1	1	1	1	1	1		
Mediastinum.....			1																					1	1	1	1	1	1	1	1	1		
Neck.....	1		1										1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2	2			
Shoulder.....																								1	1	1	1	1	1	1	1	1		
Thigh.....	1																							1	1	1	1	1	1	1	1	1		
Saturnism.....	1																							1	1	1	1	1	1	1	1	1		
Scarlet Fever.....	2	1	2	3	1	1	3	1	3	1	4	1	1	1	1	2	1	3	1	1	2	2	2	27	3	10	20	16	16	14	14			
Sclerosis, Arterial.....					1		1		2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	6	5	6	5	7	4	4	4			
Spinal.....										1													1	1	1	1	1	1	1	1	1	1		
Scorbutus.....							1																1	1	1	1	1	1	1	1	1	1		
Scrofula.....											1	2		1	2	1								4	1	1	1	3	2	2	2	2		
Septicæmia.....									1														1	1	1	1	1	1	1	1	1	1		
Smallpox.....	2	1	3		8	2	9	2	3	3													20	15	2	33	26	9	1	1	1	1		
Spinal Disease*.....													1										1	1	1	1	1	1	1	1	1	1		
Stomach, Ulcer of.....	1	1	1		1		1		1		1	2		2	1	1	1	1	1	1	1	1	1	9	4	1	1	6	5	8	8			
Stomatitis.....										1		1											4	1	2	3	2	2	2	2	2	2		

\* Not otherwise placed.

TABLE VII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY		PARENT-AGE.		SEX.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Am.	For.	Am.	For.	M.	F.	
Stricture of Esophagus.....																													1	1	
Urethra.....		1											1															1	1		
Suicide by Cutting Throat....	3				1		1								1												2	4	6	3	
by Drowning.....											1	1	1														3	3	3	3	
by Hanging.....									3				4	1	1												3	7	8	2	
by Illuminating Gas.....		1							2		1									2							6	4	2	6	
by Inhalation of Chloroform....																	1										1	1	1	1	
by Jumping from Window....											1																1	1	1	1	
by Setting Fire to Clothing....											1				1												1	3	9	3	
by Shooting.....	2	2								3		1	1				2					1					1	1	1	1	
by Poison, Arsenic.....	1																										1	1	1	1	
Carbolic Acid.....	1							1			1																3	2	2	2	
Hydrocyanic Acid.....					1		1																				3	2	3	3	
Opium.....		1			1						1		1														2	2	2	2	
Paris Green.....									1											1							1	1	1	1	
Suppurating Cervical Glands....																											1	1	1	1	
Synovitis, Purulent.....	1																										1	1	1	1	
Syphilis.....	1	1			1		2		1				2	1													6	3	5	4	
Congenital.....	1	1			1		1		1			1	1				1	1								11	2	7	6	8	
Tabes Dorsalis.....					1		1				1																1	2	1	2	3
Thrombosis, Cerebral.....					1		1		1					2	1	1	1									1	2	1	2	5	
Tonsillitis.....					2						1					1										8	4	6	2	7	
Tubercular Enteritis.....	1						1																			3	1	1	3	4	
Tabes Mesenterica.....	1	1			1						3	1			2	1										9	3	3	9	6	
Laryngitis.....	1								3		1		1			1										3	3	3	1	3	
																										4	3	4	4	4	

TABLE VII.—CAUSES OF DEATH, 1902.—Concluded.

CAUSES OF DEATH.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		NATIVITY.		PARENT-AGE.		SEX.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Am.	For.	Am.	For.	M.	F.
Tubercular Meningitis.....		2	3	3	5	3	2	1	3	2	4	1	1	3	3	2	2	3	4	2	1	2	2	2	2	50	6	25	31	26	30
Peritonitis.....		.....	.....	.....	.....	1	1	1	2	.....	2	.....	2	2	1	.....	1	.....	.....	.....	1	1	1	1	2	12	6	7	11	6	12
Tuberculosis, Pulmonary.....		47	46	30	32	37	31	38	39	51	32	31	29	25	21	25	28	27	33	30	34	28	24	38	35	481	310	224	567	407	384
General.....		4	2	3	1	2	2	1	.....	2	.....	3	4	3	.....	.....	.....	1	2	2	2	1	1	.....	29	7	13	23	18	18	
Bladder.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	1	
Hip-joint.....		.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	1	
Kidney.....		.....	.....	2	.....	.....	.....	.....	.....	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	3	1	2	2	2
Leg.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tumor of Abdomen.....		1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	1	1	1	1	.....
Brain.....		1	2	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	6	4	4	6	5	5	5
Broad Ligament.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Omentum.....		.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pylorus.....		.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spleen.....		.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unspecified.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Typhoid Fever.....		1	3	5	3	.....	3	4	1	5	2	3	2	2	3	1	2	8	2	12	6	4	7	7	5	49	42	29	62	52	39
Ulcer of Arm (Pyæmia).....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rodent, of Face.....		.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ulcerated Tooth (Septic Absorption).....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ulcerations, Numerous.....		.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ulcers, Varicose.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Umbilicus, Inflammation of.....		1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Varicella.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cause Unknown.....		.....	1	1	2	.....	.....	.....	2	1	.....	2	1	2	3	1	.....	2	.....	2	.....	1	.....	1	1	14	9	8	15	15	8



TABLE VIII.—CAUSES OF DEATH, 1902.

Arranged Alphabetically; showing the Number of each Sex who died from each cause, in each Period of Life.

CAUSES OF DEATH.	Under 1.		1 and under 2.		2 to 3.		3 to 4.		4 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 and over.		Age not stated.		SEX.		Total.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Abcess of Brain.....																																							6
Kidney.....																																						1	
Liver.....																																						2	
Lung.....																																						4	
Neck.....																																						1	
Ovary.....																																						2	
Pelvis.....																																						4	
Perineum.....																																						1	
Prostate.....																																						1	
Multiple, of Body.....	1																																					1	
Multiple, of Scalp.....	1																																					1	
Accidents,* Asphyxia.....	4	3																																				27	
Bicycle.....																																						1	
Burns and Scalds.....	2	1	1	2	2	3	1	3	1	1	1	1	1	1	1	1	3	5	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	34		
Drowning.....																																					47		
Electric Car.....																																					10		
Electric Shock.....																																					2		
Elevator.....																																					3		
Explosion of Dynamite.....																																					1		
Exposure.....																																					5		
Falls.....	1	2		2		2		2		2	1	1	1	1	1	1	4	2	10	8	2	5	5	6	5	2	3	3	3	3	3	3	3	3	3	3	74		
Firearms.....																																					2		
Insolation.....																																					1		
Machinery.....																																					7		
Poison.....																																					9		
Railroad.....																																					45		

\* See table LXI of this report.







TABLE VIII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.		Under 1.		1 and under 2.		2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	SEX.		TOTAL.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Cancer of Vulva .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Multiple .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Carcinoma Oris .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Carcinoma .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Cellulitis of Hand and Arm .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
Childbirth* .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Placenta Previa .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
Post-partum Hemorrhage .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Pulmonary Embolism .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Puerperal Nephritis and Eclampsia .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Puerperal Peritonitis .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22
Puerperal Septicæmia .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
Chlorosis .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26
Cholera Infantum .....		171	136	34	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Cholera Morbus .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	362
Colitis (under 2 years) .....		3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
Enteritis (under 2 years) .....		37	31	11	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
Colitis (over 2 years) .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26
Enteritis (over 2 years) .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Convulsions of Children .....		16	12	5	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
Croup (without membrane) .....		4	3	4	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
Cystitis .....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
Debility, Congenital (under 3 mos.) .....		57	37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
Asphyxia Neonatorum .....		10	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26
Difficult Labor .....		14	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
Injury at Birth .....		7	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Premature Birth .....		82	74	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	82

\* Not otherwise placed.



TABLE VIII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Under 1.		1 and under 2.		2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Age not stated.		SEX.		TOTAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Gastritis.....	2	4	3										4	3	3	7	2	11	9	3	1	6		60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Goitre.....								1	1														21	39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Exophthalmic.....																								1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Heart Diseases*.....	1	1	1							6	1	6	10	9	5	12	15	22	28	33	47	41	34	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Enlargement.....																								162																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Fatty Degeneration.....													1	1	1	1	1	1	1	1	1	1	1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Hypertrophy.....												2			3	1	3							8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Valvular Disease.....																								1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Mitral Stenosis.....								1	2	1	3	9	11	11	8	15	26	14	26	18	30	22	13	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

\* Not otherwise placed.



TABLE VIII.—CAUSES OF DEATH, 1902.—Continued.

CAUSES OF DEATH.	Under 1.		1 and under 2.		2 to 3.		3 to 4.		4 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 and over.		Age not stated.		SEX.		TOTAL.		
	M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.						
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				M.	F.
Influenza.....	2	2	5												1				1		1		3	3	2	3	6	3	2		2				17	20	37		
Insanity*.....																																				...	1	1	2
Dementia.....																																				4	2	6	
Mania, Acute.....																																				...	2	2	
Mania, Chronic.....																																				1	...	1	
Melancholia.....																																				5	2	7	
Intestinal Diseases*.....																																				...	...	1	
Obstruction.....	1																																			...	...	1	
Fecal Impaction.....	2		2																																	4	4	8	
Intussusception.....	3	1																																		7	6	13	
Kidney Diseases*.....																																				9	7	16	
Bright's Disease.....	1		1																																	109	81	190	
Acute.....																																				6	3	9	
Nephritis.....	1																																			136	130	266	
Acute.....	4	2	1																																	32	28	60	
Pyelonephrosis.....																																				3	...	3	
Uremia.....																																				3	2	5	
Laryngitis.....	1	2																																		3	3	6	
Leukemia.....																																				2	2	4	
Liver Diseases*.....																																				4	6	10	
Acute Yellow Atrophy of.....																																				...	5	5	
Cirrhosis of.....																																				35	24	59	
Congestion of.....																																				...	5	5	
Enlargement of.....																																				2	1	3	
Hypertrophy of.....																																				1	1	2	
Sclerosis of.....																																				...	...	1	
Locomotor Ataxia.....	1		1																																	7	5	12	
Malaria.....																																				6	7	13	

\* Not otherwise placed.











TABLE VIII.—CAUSES OF DEATH, 1902.—Concluded.

CAUSES OF DEATH.	Under 1.		1 and under 2.		2 to 3.		3 to 4.		4 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 and over.		Age not stated.		SEX.		TOTAL.		
	M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.						
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				M.	F.
Tuberculosis of Bladder.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Hip-joint.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Kidney.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	4
Leg.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Tumor of Abdomen.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2
Brain.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	10
Broad Ligament.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Omentum.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Pylorus.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Spleen.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Unspecified.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Typhoid Fever.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Ulcer of Arm (Pyemia).....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	91
Ulcer of Face.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Rodent, of Face.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Ulcerated Tooth (Septic Absorption).....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Ulcerations, Numerous.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Ulcers, Varicose.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3
Unbilicus, Inflammation of.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3
Varicella.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Cause Unknown.....	3	2	2	1	1	..	..	..	..	..	1	..	..	..	3	..	..	..	..	..	1	2	1	1	2	1	..	..	..	..	..	..	1	..	..	15	8	23	











3	1	6	8	1	19	18.	Erysipelas	.24	.32	.24	.47	.21	.55
	1				1	19.	Other Epidemic Diseases	.01				.24	
<i>(B. Other General Diseases.)</i>													
1	1	1	1	1	5	20.	Purulent Infection and Septicæmia	.06		.03	.14	.35	.40
	2	1	1	1	7	26.	Tuberculosis of the Larynx	.09	.18	.03	.14	.08	.37
22	38	8	34	135	20	66	383	64	21	791	27.	Tuberculosis of the Lungs	9.94
3	3	1	2	8	1	4	32	2		56	28.	Tuberculosis of the Meninges	.70
		2	2	4	4	18	2	1		33	29.	Abdominal Tuberculosis	.41
1	1	2			1					4	30.	Pott's Disease	.05
					1					1	32.	White Swelling	.01
					5	1				6	33.	Tuberculosis of Other Organs	.08
2	2	1	6	4	1	21		1		36	34.	General Tuberculosis	.45
1					2	1		4		35.	Serofula	.05	.18
2		5	2	11	1	1		22		36.	Syphilis	.28	.37
		1	1	3	1	2		8		39.	Cancer and other Malignant Tumors of the Buccal Cavity	.10	
3	7	5	6	16	4	16	49	3	13	122	40.	Cancer and other Malignant Tumors of the Stomach and Liver	1.53
2	2	4	8	5	27	5	2	55		41.	Cancer and other Malignant Tumors of the Peritoneum, Intestines, and Rectum	.69	1.30
1	2	1	12	6	27	1	3	53		42.	Cancer and other Malignant Tumors of the Female Genital Organs	.67	.80
2	4	2	7	1	4	25	2	6		43.	Cancer and other Malignant Tumors of the Breast	.67	.40
2	2	1	1	4				18		44.	Cancer and other Malignant Tumors of the Skin	.23	.80
3	5	2	6	11	1	2	11	2	2	45.	Cancer and other Malignant Tumors of other Organs	.57	1.20
					1	10		11		46.	Other Tumors (Tumors of the Female Genital Organs excepted)	.14	
1	1	3	7	1	4	17	4	2	39	47.	Acute Articular Rheumatism	.49	.40
	1	1	2		4			8		48.	Chronic Rheumatism and Gout	.10	
				1	1			1		49.	Scurvy	.01	.18



.....	1	1	2	10	1	15	62.	Progressive Locomotor Ataxia.....	.19	.....	.18	.29	.27	.....	.08	.24	.....	.....							
1	1	2	1	1	4	16	63.	Other Diseases of the Spinal Cord .....	.20	1.28	.37	.12	.....	.35	.08	.47	.....	.18							
16	30	14	30	82	11	44	165	18	22	432	64.	Congestion and Hemorrhage of Brain.....	5.43	7.05	3.30	4.86	5.97	3.83	6.43	7.08	.....	5.50	6.40		
1	3	2	.....	1	2	5	1	15	65.	Softening of the Brain.....	.19	.....	.15	.27	.....	.08	.....	1.09	.55	.40	.....	.55	.40		
2	7	1	.....	15	1	7	19	13	1	66	66.	Paralysis without Specified Cause .....	.83	.32	2.38	.56	.95	.35	1.18	.....	.54	1.28	.80		
1	1	3	.....	18	.....	1	2	1	1	28	67.	General Paralysis.....	.35	.32	.18	.06	.14	.....	1.41	.....	1.63	.18	.40		
3	5	.....	5	.....	3	.....	16	68.	Other Forms of Mental Alienation.....	.20	.....	.09	.....	.....	.39	.....	.....	.92	1.20	.....	.92	1.20			
1	3	.....	6	1	.....	4	2	3	20	69.	Epilepsy.....	.25	.96	.37	.12	.....	.35	.47	.....	.55	.40	.....	.55	.40	
1	3	.....	1	7	4	6	15	4	.....	41	71.	Convulsions (under 5 years).....	.52	.....	.73	.44	.81	1.39	.55	.24	.....	.55	.40		
3	3	.....	5	1	3	12	.....	27	74.	Other Diseases of the Nervous System.....	.34	.....	.35	.41	.35	.39	.....	.....	.55	1.20	.....	.55	1.20		
.....	.....	.....	1	.....	.....	1	75.	Diseases of the Eye and its Adnexa.....	.01	.....	.....	.....	.....	.....	.08	.....	.....	.....	.....	.....	.....	.....	.....		
III.																									
DISEASES OF THE CIRCULATORY SYSTEM.																									
2	2	.....	1	1	2	4	1	14	77.	Pericarditis.....	.18	.....	.12	.27	.35	.08	.24	.....	.37	.80	.....	.37	.80		
.....	1	.....	5	9	4	23	1	2	45	78.	Acute Endocarditis.....	.57	.64	.18	.68	.54	.....	.71	1.18	.....	.18	.....	.18	.....	
18	41	11	37	99	20	63	247	26	47	609	79.	Organic Diseases of the Heart.....	7.65	15.06	4.76	7.28	8.55	6.97	7.76	8.72	5.98	7.52	7.20		
5	3	2	3	7	6	7	1	1	35	80.	Angina Pectoris.....	.44	.32	.18	.21	.81	.....	.55	.71	1.09	.55	2.00	.....	.55	2.00
.....	2	2	.....	2	3	9	1	19	81.	Diseases of the Arteries.....	.24	.....	.18	.27	.41	.....	.16	.....	1.09	.37	.....	.37	.....		
.....	2	.....	4	1	1	11	.....	19	82.	Embolism and Thrombosis.....	.24	.....	.32	.....	.35	.08	.94	.....	.37	.....	.37	.....	.37	.....	
.....	1	.....	.....	1	3	1	6	83.	Diseases of the Veins.....	.08	.....	.09	.14	.....	.....	.54	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	1	.....	1	84.	Diseases of the Lymphatic System.....	.01	.....	.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	1	1	.....	2	85.	Hemorrhages.....	.03	.....	.03	.14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
IV.																									
DISEASES OF THE RESPIRATORY SYSTEM.																									
.....	1	.....	.....	.....	.....	.....	.....	2	3	87.	Diseases of the Nasal Fosse.....	.04	.....	.06	.....	.....	.....	.....	.....	.....	.....	.18	.....	.18	.....

TABLE IX.—CLASSIFICATION AND PERCENTAGE, 1902.—Continued.

[CAUSES NUMBERED ACCORDING TO BERTILLON CLASSIFICATION.]

NUMBER OF DEATHS IN EACH DIVISION OF THE STATE.										CAUSES OF DEATH.										PERCENTAGE OF DEATHS IN WHOLE STATE.										PERCENTAGE OF DEATHS IN EACH DIVISION.									
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										CAUSES OF DEATH.										PERCENTAGE OF DEATHS IN WHOLE STATE.																			





TABLE IX.—CLASSIFICATION AND PERCENTAGE, 1902.—Continued.

[CAUSES NUMBERED ACCORDING TO BERTILLOU CLASSIFICATION.]

NUMBER OF DEATHS IN EACH DIVISION OF THE STATE.										PERCENTAGE OF DEATHS IN EACH DIVISION.									
CAUSES OF DEATH.										Percentage in Whole State.									
Whole State.										Percentage in Whole State.									
Bristol County.	Kent County.	Newport County Towns.	Newport City.	Providence County Towns.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Washington County.	Bristol County.	Kent County.	Newport County Towns.	Newport City.	Providence County Towns.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Washington County.
1	1	1	1	1	1	3	6	1	15	125. Diseases of the Prostate.....	12	125. Diseases of the Prostate.....	12	125. Diseases of the Prostate.....	12	125. Diseases of the Prostate.....	12	125. Diseases of the Prostate.....	12
1	1	1	1	1	1	1	1	1	.01	126. { Non-venereal Diseases of the Male Genital { Organs.....	1	126. { Non-venereal Diseases of the Male Genital { Organs.....	1	126. { Non-venereal Diseases of the Male Genital { Organs.....	1	126. { Non-venereal Diseases of the Male Genital { Organs.....	1	126. { Non-venereal Diseases of the Male Genital { Organs.....	1
1	1	1	1	1	1	1	1	1	.01	127. Metritis.....	1	127. Metritis.....	1	127. Metritis.....	1	127. Metritis.....	1	127. Metritis.....	1
1	1	1	1	1	1	1	1	1	.03	128. Uterine Hemorrhage (non-puerperal).....	2	128. Uterine Hemorrhage (non-puerperal).....	2	128. Uterine Hemorrhage (non-puerperal).....	2	128. Uterine Hemorrhage (non-puerperal).....	2	128. Uterine Hemorrhage (non-puerperal).....	2
1	1	1	1	1	1	1	1	1	.25	129. Uterine Tumor (non-cancerous).....	20	129. Uterine Tumor (non-cancerous).....	20	129. Uterine Tumor (non-cancerous).....	20	129. Uterine Tumor (non-cancerous).....	20	129. Uterine Tumor (non-cancerous).....	20
1	1	1	1	1	1	1	1	1	.08	130. Other Diseases of the Uterus.....	6	130. Other Diseases of the Uterus.....	6	130. Other Diseases of the Uterus.....	6	130. Other Diseases of the Uterus.....	6	130. Other Diseases of the Uterus.....	6
1	1	1	1	1	1	1	1	1	.10	131. Cysts and other Tumors of the Ovary.....	8	131. Cysts and other Tumors of the Ovary.....	8	131. Cysts and other Tumors of the Ovary.....	8	131. Cysts and other Tumors of the Ovary.....	8	131. Cysts and other Tumors of the Ovary.....	8
1	1	1	1	1	1	1	1	1	.11	132-1. Diseases of the Tubes.....	2	132-1. Diseases of the Tubes.....	2	132-1. Diseases of the Tubes.....	2	132-1. Diseases of the Tubes.....	2	132-1. Diseases of the Tubes.....	2
1	1	1	1	1	1	1	1	1	.03	132-2. Other Diseases of the Female Genital Organs.....	9	132-2. Other Diseases of the Female Genital Organs.....	9	132-2. Other Diseases of the Female Genital Organs.....	9	132-2. Other Diseases of the Female Genital Organs.....	9	132-2. Other Diseases of the Female Genital Organs.....	9
VII.																			
THE PUERPERAL STATE.																			
1	1	1	1	1	1	1	1	1	.01	134. Accidents of Pregnancy.....	1	134. Accidents of Pregnancy.....	1	134. Accidents of Pregnancy.....	1	134. Accidents of Pregnancy.....	1	134. Accidents of Pregnancy.....	1
1	1	1	1	1	1	1	1	1	.04	135. Puerperal Hemorrhage.....	8	135. Puerperal Hemorrhage.....	8	135. Puerperal Hemorrhage.....	8	135. Puerperal Hemorrhage.....	8	135. Puerperal Hemorrhage.....	8
1	1	1	1	1	1	1	1	1	.10	Other Accidents of Labor.....	8	Other Accidents of Labor.....	8	Other Accidents of Labor.....	8	Other Accidents of Labor.....	8	Other Accidents of Labor.....	8

4	1	3	7	2	14	33	137.	Puerperal Septicæmia.....	.42	.....	.41	.27	.70	.55	.71	.54	.73	.....
.....	1	.....	6	1	3	9	1	22 138.	Puerperal Albuminuria and Convulsions,...	.28	.32	.18	.27	.41	.35	.47	.18	.....
1	.....	.....	.....	.....	4	.....	5	140.	Other Puerperal Accidents .....	.06	.....	.12	.....	.....	.....	.....	.40	.....
VIII.																		
DISEASES OF THE SKIN AND CELLULAR TISSUE.																		
1	.....	.....	.....	.....	3	1	1	6 142.	Gangrene.....	.08	.32	.18	.....	.....	.....	.....	.18	.....
.....	.....	3	.....	1	.....	.....	4	143.	Carbuncle.....	.05	.....	.14	.....	.24	.....	.....	.....	.....
1	1	.....	1	.....	2	1	.....	6 144.	Acute Abscess, Phlegmon.....	.08	.....	.03	.27	.....	.08	.54	.18	.....
.....	.....	1	.....	1	.....	2	.....	3 145.	Other Diseases of the Skin and its Adnexa..	.04	.....	.06	.....	.08	.....	.....	.....	.....
IX.																		
DISEASES OF THE ORGANS OF LOCOMOTION.																		
1	.....	.....	4	1	1	5	.....	13 146.	Non-tuberculous Diseases of the Bones, ...	.16	.32	.....	.15	.14	.35	.31	.18	.....
.....	.....	.....	.....	.....	.....	.....	1	147.	Arthritis and other Diseases of the Joints..	.01	.....	.18	.....	.....	.....	.....	.....	.....
X.																		
MALFORMATIONS.																		
2	.....	2	.....	1	5	.....	1	11 150-1.	Hydrocephalus (non-tuberculous).....	.14	.32	.....	.15	.14	.....	.47	.37	.....
3	2	.....	8	4	6	19	3	2 47 150-2.	Cyanosis.....	.59	.64	.55	.56	.81	1.30	.63	.37	1.20
1	1	.....	3	.....	3	3	3	2 21 150-2.	Other Congenital Malformations .....	.26	.64	.55	.24	.41	.....	.24	.18	.40
XI.																		
EARLY INFANCY.																		
3	8	4	9	19	7	12	77	5 156 151-1.	Premature Birth (not Still-birth).....	1.96	1.60	2.20	2.27	1.63	2.44	1.49	2.12	2.17
5	26	3	20	36	17	28	125	29 5 294 151-2.	Congenital Debility .....	3.70	1.60	5.31	3.08	3.80	5.92	2.82	4.72	1.63
.....	3	.....	2	4	3	.....	11	2 25 152.	Other Diseases Peculiar to Early Infancy ..	.31	.64	.....	.32	.....	1.05	.31	.47	.....
3	2	.....	1	.....	.....	.....	.....	1 7 153.	Lack of Care.....	.03	.32	.....	.....	.....	.....	.08	1.09	.55





TABLE X.—*According to International Classification.*

CAUSES OF DEATH.	1853.	1854.	1855.	1856.	1857.	1858.	1859.
I.							
GENERAL DISEASES.....	592	902	748	836	935	1,115	926
II.							
DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.....	130	161	182	185	221	223	217
III.							
DISEASES OF THE CIRCULATORY SYSTEM.....	29	40	66	44	71	72	65
IV.							
DISEASES OF THE RESPIRATORY SYSTEM.....	94	116	151	213	234	267	219
V.							
DISEASES OF THE DIGESTIVE SYSTEM.....	79	137	205	178	194	238	203
VI.							
DISEASES OF THE GENITO-URINARY SYSTEM AND ITS AD- NEXA.....	10	8	13	12	25	21	20
VII.							
PUERPERAL STATE.....	12	9	15	24	21	31	25
VIII.							
DISEASES OF THE SKIN AND CELLULAR TISSUE.....	7	5	12	12	17	12	6
IX.							
DISEASES OF THE ORGANS OF LOCOMOTION.....	3	1	2	7	6	6	9
X.							
MALFORMATIONS.....	3	7	11	5	12	14	14
XI.							
EARLY INFANCY.....	10	34	63	33	52	62	56
XII.							
OLD AGE.....	58	67	84	76	119	114	117
XIII.							
EXTERNAL CAUSES.....	63	56	74	61	82	87	89
XIV.							
ILL-DEFINED DISEASES.....	160	185	220	356	336	354	304
TOTAL NUMBER OF DEATHS.....	1,250	1,728	1,846	2,042	2,325	2,616	2,270



TABLE X.—*International Classification.*—Continued.

1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.
1,067	1,255	1,042	1,467	1,480	1,655	1,259	1,101	1,065	1,433	1,278	1,199	1,404	1,635	1,635	1,482	1,504	1,874	1,888
245	287	231	282	296	286	294	320	277	320	342	379	446	512	434	454	444	471	492
76	112	115	103	128	99	117	116	117	130	123	148	190	193	220	192	173	192	173
272	282	251	314	341	302	292	264	265	280	288	341	379	390	414	591	530	417	523
336	287	285	277	351	316	275	285	292	301	333	347	628	508	505	549	476	513	395
22	28	24	34	23	24	24	43	37	40	41	52	75	80	83	75	66	93	89
22	26	27	35	37	31	31	34	34	37	44	52	45	46	60	53	48	46	43
21	29	16	17	18	21	21	29	21	14	19	28	24	30	29	29	35	23	30
5	15	8	9	7	5	5	6	12	11	15	5	11	18	15	16	27	15	10
15	13	11	13	8	10	12	17	16	15	14	15	17	15	17	15	11	26	32
73	85	76	81	74	93	77	90	70	58	91	73	131	219	196	155	97	94	88
116	132	143	161	193	152	178	188	206	217	204	232	233	254	223	216	241	213	222
135	108	107	125	116	103	132	122	115	122	139	125	146	156	150	171	153	162	159
281	268	255	289	288	308	253	274	385	404	257	348	518	347	248	319	311	311	297
2,686	2,927	2,591	3,207	3,360	3,405	2,970	2,889	2,912	3,382	3,238	3,344	4,247	4,408	4,229	4,317	4,116	4,450	4,441

TABLE X.—*International Classification.*—Continued.

CAUSES OF DEATH.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
I.								
GENERAL DISEASES.....	1,830	1,879	1,829	1,729	1,809	1,800	1,851	2,056
II.								
DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.....	534	571	609	630	660	671	658	737
III.								
DISEASES OF THE CIRCULATORY SYSTEM.....	209	243	274	256	336	294	361	336
IV.								
DISEASES OF THE RESPIRATORY SYSTEM.....	514	574	565	558	648	597	764	786
V.								
DISEASES OF THE DIGESTIVE SYSTEM.....	381	487	508	672	608	690	613	790
VI.								
DISEASES OF THE GENITO-URINARY SYSTEM AND ITS ADNEXA.....	98	111	97	111	184	167	208	210
VII.								
PUERPERAL STATE.....	45	51	60	50	60	51	47	41
VIII.								
DISEASES OF THE SKIN AND CELLULAR TISSUE.....	32	18	39	24	32	46	43	30
IX.								
DISEASES OF THE ORGANS OF LOCOMOTION.....	20	15	11	25	26	32	34	26
X.								
MALFORMATIONS.....	19	13	26	21	19	22	15	15
XI.								
EARLY INFANCY.....	91	121	130	134	184	154	167	194
XII.								
OLD AGE.....	220	273	247	283	275	293	267	276
XIII.								
EXTERNAL CAUSES.....	127	157	182	215	185	221	201	213
XIV.								
ILL-DEFINED DISEASES.....	352	316	449	366	256	103	160	139
TOTAL NUMBER OF DEATHS.....	4,472	4,829	5,016	5,074	5,282	5,141	5,389	5,849

TABLE X.—*International Classification.*—Continued.

1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	TOTAL AND PER- CENTAGE FOR 50 YEARS, 1853-1902.	
2,301	2,288	2,097	2,420	2,153	2,373	2,280	2,166	2,237	2,003	2,035	1,820	2,117	2,578	2,118	2,121	82,757	34.74
803	827	706	789	763	846	883	924	941	891	935	902	857	928	910	888	26,994	11.33
414	449	474	419	489	510	540	481	538	560	571	554	656	715	720	750	14,253	5.98
833	869	885	991	945	1,120	1,214	1,028	1,068	1,040	929	825	990	1,343	1,058	1,040	29,214	12.26
804	880	871	1,020	976	1,126	1,156	1,035	1,098	1,191	1,038	1,234	1,243	1,423	1,365	1,124	30,876	12.96
212	241	250	281	289	303	357	391	434	484	461	542	564	593	591	629	8,870	3.72
54	51	44	45	35	77	57	72	55	54	60	71	55	99	95	72	2,289	.96
38	45	36	48	31	35	25	43	20	38	20	35	12	25	28	19	1,287	.54
23	15	18	25	20	17	14	19	23	22	18	12	18	9	7	14	712	.30
18	20	19	25	28	16	24	23	32	32	30	35	46	47	57	79	1,039	.44
245	281	250	266	326	282	277	439	417	418	412	283	315	333	333	482	8,755	3.68
278	290	227	198	185	256	183	187	282	293	253	205	228	268	234	261	10,321	4.33
224	216	243	271	273	331	287	288	330	336	315	354	331	429	408	417	9,612	4.03
93	122	139	136	107	104	143	64	60	52	33	33	26	33	42	59	11,263	4.73
6,340	6,594	6,259	6,934	6,620	7,396	7,440	7,160	7,535	7,504	7,110	6,905	7,458	8,823	7,966	7,955	238,242	100.00







TABLE X.—*International Classification.*—Continued.

Billion Numbers.	CAUSES OF DEATH.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
	I.							
	GENERAL DISEASES.							
1	Typhoid Fever .....	101	141	117	214	239	128	105
4	Intermittent Fever and Malarial Cachexia.....	2	3	10	8	21	29	34
5	Smallpox.....			3	2	2		
6	Measles.....		9	37	6	14	18	45
7	Scarlet Fever.....	311	468	138	45	34	97	91
8	Whooping Cough.....	43	20	68	71	9	43	42
9	Membranous Croup.....							
9a	Diphtheria.....	259	152	216	101	95	119	99
10	Grippe (Influenza).....	4		3	1		2	2
12	Cholera, Asiatic.....				1			
13	Cholera Nostras (Cholera Morbus).....	8	11	18	23	26	17	24
14	Dysentery.....	44	28	42	68	54	40	36
16	Yellow Fever.....		1					
18	Erysipelas.....	25	17	37	30	28	25	36
19	Other Epidemic Affections.....	1				3		
20	Purulent Infection and Septicæmia.....	2		1		3	13	10
21	Glanders and Farcy.....							
22	Malignant Pustule and Charbon (Anthrax).....			1	1		3	1
23	Rabies.....							
26	Tubercle of Larynx.....							
27	Tubercle of Lungs.....	645	652	712	744	766	739	783
28	Tubercle of Meninges.....	57	46	56	49	54	56	47
29	Tubercle, Abdominal.....	3	3	8	4	5	15	7
30	Pott's Disease.....							
31	Abscess, Cold and by Congestion.....							
32	White Swelling.....							
33	Tubercle of Other Organs.....							
34	Tubercle, Generalized.....	36	12	39	27	29	36	43
35	Scrofula.....	13	12	15	14	22	20	18
36	Syphilis.....	10	10	4	16	18	14	7
37	Blennorrhagia of the Adult.....			2				1
39	Cancer of the Buccal Cavity.....					2		
40	Cancer of Stomach and Liver.....	24	18	27	20	41	22	53
41	Cancer of the Peritoneum, Intestines, and Rectum.....					12		1
42	Cancer of the Genital Organs of the Female.....	21	21	22	14	25	22	26
43	Cancer of Breast.....	10	8	16	13	21	18	24
44	Cancer of the Skin.....					4		3
45	Cancer of organs not specified.....	70	78	80	85	61	94	86
46	Other Tumors (Tumors of Female Genital Organs excepted).....							
47	Rheumatism, Acute Articular.....					23		
48	Rheumatism, Chronic, and Gout.....	24	24	29	21	4	35	34
49	Scurbutus (Scurvy).....							
50	Diabetes.....	15	15	16	13	15	25	21
51	Goitre, Exophthalmic.....							
52	Addison's Disease.....							
53	Leukemia.....							
54	Anemia and Chlorosis.....	8	8	4	4	7	7	6
55	Other General Diseases.....	79	107	84	107	140	133	144
56	Alcoholism, Acute and Chronic.....	15	15	24	27	29	30	22
57	Saturnism (Lead Poisoning).....							
59	Other Chronic Poisonings.....							
	II.							
	DISEASES OF THE NERVOUS SYSTEM AND THE ORGANS OF SPECIAL SENSE.							
60	Encephalitis.....	73	85	100	87	83	68	81
61	Meningitis, Simple.....	6	3	7	8	8	10	13
61a	Meningitis, Epidemic Cerebro-Spinal.....	10	20	18	28	26	21	16
62	Locomotor Ataxia, Progressive.....							
63	Other Diseases of the Spinal Cord.....							
64	Cerebral Congestion and Hemorrhage.....	137	119	146	154	157	182	185
65	Cerebral Softening.....							
66	Paralysis, without specified cause.....	83	96	101	111	118	116	104
67	Paralysis, General.....							
68	Other forms of Mental Alienation.....	17	19	32	23	29	36	35
69	Epilepsy.....	13	14	13	14	18	11	23
71	Convulsions of Children.....	104	133	102	110	126	139	111
72	Tetanus.....	6	3	8	8	8	5	4
73	Chorea.....		3			1		
74a	Neuralgia.....							
74b	Other Diseases of the Nervous System.....	85	76	82	87	86	83	86
75	Diseases of the Eye and its Adnexa.....							
76	Diseases of the Ear.....							



TABLE X.—*International Classification.*—Continued.

1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	TOTAL AND PER- CENTAGE FOR 50 YEARS, 1853-1902.	
121	116	224	135	107	149	133	129	160	125	113	66	76	90	127	103	91	5,972	2.52
43	85	71	40	42	31	36	10	30	29	42	44	31	30	21	23	19	766	.32
...	...	...	...	1	1	4	...	2	...	...	...	...	...	1	5	34	253	.11
18	132	11	29	92	12	28	100	9	54	58	33	18	47	185	15	25	1,498	.63
88	266	207	51	16	33	67	193	123	107	53	29	21	29	34	21	30	5,995	2.52
49	21	44	77	70	77	25	23	129	45	59	56	96	86	86	17	85	2,112	.80
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	199	.08
228	287	191	184	211	102	89	157	133	340	283	231	93	86	112	113	109	6,215	2.61
7	...	...	4	168	177	336	85	166	115	42	153	75	219	255	146	37	2,069	.87
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	227	.10
17	21	30	26	36	28	33	35	23	19	18	16	14	13	18	8	8	766	.32
66	66	77	71	87	59	71	42	41	41	31	45	38	44	86	75	121	3,462	1.45
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	.00
31	32	31	28	22	26	25	31	27	20	27	14	9	21	17	10	19	1,063	.45
...	...	...	2	1	1	1	...	3	4	3	1	1	3	...	...	1	36	.02
10	18	24	8	14	12	13	11	7	...	...	...	...	...	4	2	5	164	.07
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	.00
...	1	2	1	...	...	1	1	...	1	...	...	...	...	...	...	...	33	.01
...	...	1	2	4	1	...	...	2	...	...	...	...	...	...	...	...	22	.01
...	...	...	...	...	...	...	...	...	7	4	2	5	5	8	7	7	45	.02
827	710	800	727	852	740	759	722	705	799	846	777	765	823	850	844	791	31,640	13.28
54	54	50	58	72	66	62	53	51	58	73	71	71	84	89	63	56	2,874	1.21
19	6	13	11	11	12	26	8	11	13	17	20	30	31	25	43	33	468	.20
...	...	...	2	1	3	3	...	...	...	1	...	...	...	1	5	6	31	.01
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	.00
41	29	32	40	36	52	50	72	80	46	37	36	29	42	27	26	36	1,161	.49
23	21	12	15	10	18	15	13	12	12	12	20	4	1	2	4	4	625	.26
12	13	11	13	15	8	14	16	16	15	12	21	23	17	27	18	22	456	.19
1	1	2	1	...	3	1	...	...	1	...	...	...	...	...	...	...	20	.01
...	1	3	7	3	5	5	5	...	9	6	7	4	10	11	4	8	92	.04
48	45	58	60	49	50	47	68	68	63	59	78	100	93	121	109	122	1,672	.70
5	8	12	17	14	13	14	16	23	29	27	25	19	41	27	36	55	401	.17
23	21	25	26	30	28	26	45	42	49	47	60	72	42	52	59	53	1,037	.43
14	21	21	19	14	18	29	27	27	41	47	38	32	47	41	43	53	789	.33
...	5	1	4	5	2	1	5	14	11	15	10	13	14	21	18	18	168	.07
69	58	73	56	50	61	59	39	40	32	25	36	39	45	30	37	45	2,462	1.03
...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	19	12	44	.02
...	33	33	28	29	32	45	37	26	18	20	20	16	15	24	20	38	465	.19
35	2	2	4	6	3	3	4	11	21	8	8	2	9	14	9	8	605	.25
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	2	.00
24	22	13	32	27	26	37	40	38	40	41	48	39	40	50	81	51	905	.38
...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	2	14	.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	1	5	.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	4	16	.01
15	16	13	21	19	20	16	23	20	29	31	24	18	23	37	22	22	522	.22
156	174	178	261	271	254	263	221	87	11	8	4	8	20	...	...	...	1,145	1.74
12	16	16	37	25	29	36	47	39	24	34	39	45	34	62	40	39	1,198	.50
...	...	...	...	...	...	1	1	...	...	...	1	1	1	2	2	1	11	.00
...	...	...	...	...	...	...	...	...	...	...	...	6	1	...	...	1	7	.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	5	14	10	51	62	37	17	5	2	...	...	...	...	...	3	19	1,937	.81
93	107	119	99	121	116	130	120	140	145	165	166	187	155	191	192	160	2,590	1.09
10	24	22	9	17	16	18	40	13	11	22	19	67	42	34	27	32	735	.31
...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	13	15	35	.01
...	...	...	...	...	...	...	...	...	...	...	...	...	...	20	30	16	66	.03
230	206	211	210	242	219	238	276	289	417	404	455	402	445	473	415	432	8,184	3.44
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22	14	51	.02
107	122	156	113	99	116	124	131	156	13	15	14	14	12	31	102	66	3,345	1.40
...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	...	28	44	.02
49	64	43	22	30	21	27	39	49	72	53	103	82	66	54	33	16	1,399	.59
14	17	16	19	23	27	25	12	19	20	21	17	14	25	23	24	20	663	.28
121	159	154	136	156	137	162	151	147	120	102	65	49	35	43	41	41	4,590	1.93
8	7	9	7	4	3	6	8	6	12	4	2	...	...	2	...	...	233	.10
2	1	2	1	...	1	...	4	1	1	...	1	1	1	...	...	...	27	.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	.00
92	91	81	80	46	45	79	83	89	120	106	87	84	71	1	13	27	3,046	1.28
...	...	...	...	...	...	...	...	1	3	...	1	...	1	1	...	1	8	.00
...	...	...	...	...	...	...	2	9	5	3	5	2	4	7	3	...	40	.02

TABLE X.—*International Classification.*—Continued.

Bertillon Numbers.	CAUSES OF DEATH.	1883.	1884.	1885.	1886.	1887.	1888.	1889.
III.								
DISEASES OF THE CIRCULATORY SYSTEM.								
77	Pericarditis .....		2	1	1	2		1
78	Endocarditis .....							
79	Organic Diseases of the Heart .....	28	32	61	41	63	66	61
80	Angina Pectoris .....			2		2		1
81	Diseases of the Arteries (Atheroma, Aneurism, etc.) .....	1		1	1		1	1
82	Embolism and Thrombosis .....							
83	Diseases of the Veins (Varices, Hemorrhoids, Phlebitis) .....							
84	Diseases of the Lymphatic System (Lymphangitis, etc.) .....							
85	Hemorrhages .....			1	1	4	5	1
IV.								
DISEASES OF THE RESPIRATORY SYSTEM.								
87	Diseases of the Nasal Fossæ .....							
88	Diseases of the Larynx .....	29	44	49	67	72	74	62
89	Diseases of the Thyroid Body .....							
90	Bronchitis, Acute .....	2	3	4	5	7	13	9
91	Bronchitis, Chronic .....							
93	Pneumonia .....	48	54	79	120	141	166	125
94	Pleurisy .....	7	10	12	13	10	12	18
95	Pulmonary Congestion and Apoplexy .....							
96	Gangrene of Lung .....							
97	Asthma .....	1	2	2	3	2	2	2
98	Pulmonary Emphysema .....							
99	Other Diseases of the Respiratory System .....	7	3	5	5	2		3
V.								
DISEASES OF THE DIGESTIVE SYSTEM.								
100	Diseases of the Mouth and its Adnexa .....	1	4	5	1	3	9	3
101	Diseases of the Pharynx .....							
102	Diseases of the Esophagus .....							
103	Ulcer of the Stomach .....							
104	Other Diseases of the Stomach (Cancer excepted) .....	5	8	7	19	16	9	12
105	Diarrhœa and Enteritis (under two years) .....	39	68	91	77	70	93	61
105A	Diarrhœa and Enteritis, Chronic .....							
106	Diarrhœa and Enteritis (two years and over) .....	16	35	64	47	65	65	70
107	Parasites, Intestinal .....		1	1		1	1	2
108	Hernias and Intestinal Obstructions .....	1	2	2			5	2
109	Other Diseases of the Intestines .....	4	4	4		4	4	5
109A	Diseases of the Anus and Fecal Fistulas .....						1	
110	Acute Yellow Atrophy of Liver .....							
112	Cirrhosis of the Liver .....							
113	Biliary Calculi .....							
114	Other Diseases of the Liver .....	7	8	8	7	21	35	29
115	Diseases of the Spleen .....		2					
116	Peritonitis, Simple (Puerperal excepted) .....	4	2	13	17	5	10	13
117	Other Diseases of the Digestive System (Cancer and Tubercle excepted) .....							
118	Appendicitis and Abscess of the Iliac Fossa .....	2	3	10	10	9	6	6
VI.								
DISEASES OF THE GENITO-URINARY SYSTEM AND ITS ADNEXA.								
119	Nephritis, Acute .....							
120	Bright's Disease .....	1						3
121	Other Diseases of the Kidneys and their Adnexa .....	1	1	7	5	15	8	12
122	Calculi of the Urinary Tract .....		1				2	1
123	Diseases of the Bladder .....	3	1	3	2	3	2	4
124	Diseases of the Urethra, Urinary Abscess, etc. ....							
125	Diseases of the Prostate .....		1			5	2	
126	Non-Veneral Diseases of the Male Genital Organs .....							
129	Tumor, Uterine, Non-Cancerous .....							
130	Other Diseases of the Uterus .....	5	4	1	2	2	3	
131	Cysts and other Tumors of the Ovary .....			2	3		4	
132	Other Diseases of the Female Genital Organs .....							



TABLE X.—*International Classification.*—Continued.

Bertillon Numbers.	CAUSES OF DEATH.							
		1879.	1880.	1881.	1882.	1883.	1884.	1885.
	III.							
	DISEASES OF THE CIRCULATORY SYSTEM.							
77	Pericarditis.....					17		10
78	Endocarditis.....							
79	Organic Diseases of the Heart.....	202	231	264	245	308	290	339
80	Angina Pectoris.....							5
81	Diseases of the Arteries (Atheroma, Aneurism, etc.).....	1	2	2	2	8	3	4
82	Embolism and Thrombosis.....	3	4	5	5			
83	Diseases of the Veins (Varices, Hemorrhoids, Phlebitis).....	2						
84	Diseases of the Lymphatic System (Lymphangitis, etc.).....							
85	Hemorrhages.....	1	6	3	4	3	1	3
	IV.							
	DISEASES OF THE RESPIRATORY SYSTEM.							
87	Diseases of the Nasal Fossæ.....							
88	Diseases of the Larynx.....	98	74	107	84	76	91	103
89	Diseases of the Thyroid Body.....							
90	Bronchitis, Acute.....	67	94	86	101	29	81	113
91	Bronchitis, Chronic.....					82	37	55
92	Pneumonia.....	311	364	327	344	400	363	465
93	Pleurisy.....	13	17	9	8	13	5	7
94	Pulmonary Congestion and Apoplexy.....							
95	Gangrene of Lung.....							
96	Asthma.....	13	11	16	9	13	10	21
97	Pulmonary Emphysema.....					1		
98	Other Diseases of the Respiratory System.....	12	14	20	12	34	10	
	V.							
	DISEASES OF THE DIGESTIVE SYSTEM.							
100	Diseases of the Mouth and its Adnexa.....	1		1	2	2	2	
101	Diseases of the Pharynx.....		1	2			1	1
102	Diseases of the Esophagus.....							
103	Ulcer of the Stomach.....							
104	Other Diseases of the Stomach (Cancer excepted).....	30	28	39	44	51	43	51
105	Diarrhœa and Enteritis (under two years).....	175	255	254	354	267	367	308
105a	Diarrhœa and Enteritis, Chronic.....							
106	Diarrhœa and Enteritis (two years and over).....	73	95	107	146	155	149	115
107	Parasites, Intestinal.....	1		1				
108	Hernias and Intestinal Obstructions.....	14	8	15	16	10	16	14
109	Other Diseases of the Intestines.....	2	9	6	6	21	7	10
109a	Diseases of the Anus and Fecal Fistulas.....							
110	Acute Yellow Atrophy of Liver.....							
112	Cirrhosis of the Liver.....					15		5
113	Biliary Calculi.....					1		1
114	Other Diseases of the Liver.....	52	53	45	62	35	55	56
115	Diseases of the Spleen.....						2	
116	Peritonitis, Simple (Puerperal excepted).....	24	24	27	30	40	40	35
117	Other Diseases of the Digestive System (Cancer and Tubercle excepted).....							
118	Appendicitis and Abscess of the Iliac Fossa.....	9	9	10	8	11	8	17
	VI.							
	DISEASES OF THE GENITO-URINARY SYSTEM AND ITS ADNEXA.							
119	Nephritis, Acute.....							
120	Bright's Disease.....	61	56	54	44	93	90	143
121	Other Diseases of the Kidneys and their Adnexa.....	20	35	25	44	38	39	25
122	Calculi of the Urinary Tract.....	1		1		1		1
123	Diseases of the Bladder.....	12	9	11	14	19	17	20
124	Diseases of the Urethra, Urinary Abscess, etc.....			2			3	1
125	Diseases of the Prostate.....	4	4	1	3	7	4	4
126	Non-Venereal Diseases of the Male Genital Organs.....							
129	Tumor, Uterine, Non-Cancerous.....							4
130	Other Diseases of the Uterus.....		7	3	6	20	2	2
131	Cysts and Other Tumors of the Ovary.....					6	12	8
132	Other Diseases of the Female Genital Organs.....							



TABLE X.—*International Classification.*—Continued.

1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	TOTAL AND PER- CENTAGE FOR 50 YEARS 1853-1902.	
21	20	23	29	27	33	19	8	10	8	12	13	8	14	8	17	14	333	.14
297	358	400	413	362	429	468	485	411	449	458	466	479	512	512	531	609	12,500	5.25
9	11	9	11	8	7	16	12	15	24	19	29	24	28	33	30	25	331	.14
2	5	6	7	8	5	3	4	4	7	6	4	2	5	13	10	19	169	.07
3	5	4	5	7	9	2	12	7	2	...	9	1	20	26	13	19	163	.07
1	3	...	2	1	2	1	4	...	2	3	2	...	3	3	3	6	48	.02
3	3	7	7	6	4	1	1	2	...	...	1	...	3	...	2	1	6	.00
...	...	...	...	...	...	...	5	5	3	4	1	3	3	11	7	2	149	.06
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
99	121	96	86	88	70	101	57	44	39	41	32	12	23	31	37	23	3,436	1.44
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	3	.00
143	153	201	214	234	213	257	263	201	239	237	181	195	194	248	161	208	4,726	1.99
31	23	27	46	41	34	51	52	53	35	39	45	41	47	71	51	...	108	.38
481	488	508	483	569	568	655	776	665	685	669	635	542	686	966	742	715	18,303	7.68
12	15	18	23	18	26	34	22	21	38	32	18	19	14	21	24	18	800	.34
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.00
13	20	14	13	21	24	11	13	18	22	18	15	11	20	20	12	15	501	.21
2	...	4	3	2	4	1	4	3	2	3	2	1	1	7	4	...	44	.02
5	13	11	17	18	6	10	27	20	8	1	1	4	5	2	3	5	486	.20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	1	...	2	...	2	...	...	1	...	...	...	...	...	2	1	6	141	.06
1	8	4	5	9	5	5	6	2	...	...	...	...	...	4	2	6	77	.03
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	3	.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	12	13	40	.02
59	68	61	75	73	57	67	64	62	85	67	81	93	79	59	79	96	1,974	.83
421	369	507	470	619	572	655	650	614	597	659	539	579	606	773	633	612	16,082	6.75
...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	11	...	22	.01
135	164	131	124	127	136	182	148	147	158	123	114	119	140	104	121	146	5,118	2.14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.02
16	13	14	12	18	22	24	26	19	26	15	22	36	24	50	66	45	654	.27
11	12	10	8	15	15	20	74	46	41	85	76	87	32	5	7	14	787	.33
1	1	1	1	1	...	...	1	1	2	...	2	1	1	2	1	4	21	.01
...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	6	5	20	.01
16	17	19	27	28	31	28	40	34	38	45	42	41	46	45	60	69	646	.27
...	2	2	2	4	2	3	4	2	4	2	5	10	4	3	4	12	74	.03
55	67	47	52	48	48	58	52	57	43	65	16	50	46	45	34	26	2,066	.87
1	1	1	...	...	...	...	...	1	3	1	...	1	1	...	1	1	28	.01
59	66	60	63	63	68	62	74	31	23	23	12	11	19	23	20	16	1,259	.53
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	15	22	30	20	18	21	16	17	24	29	25	45	28	34	42	51	1,115	.47
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	706	.30
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
140	130	192	176	213	229	220	258	266	314	369	379	457	463	390	446	461	235	.10
21	39	21	34	17	18	41	44	47	34	27	8	12	14	9	9	5	1,012	.42
...	1	1	5	2	2	...	4	5	6	3	4	2	7	4	3	2	109	.05
25	20	11	23	39	14	22	27	31	21	22	23	22	34	16	24	28	632	.26
1	1	2	1	...	3	...	1	...	1	...	2	1	2	3	1	3	28	.01
8	7	4	1	2	8	5	3	10	15	10	7	12	13	10	22	12	215	.09
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	5	.00
3	8	2	2	2	1	1	5	7	10	22	11	17	12	18	14	20	159	.07
1	1	3	4	2	6	7	6	11	14	15	19	7	11	10	...	9	234	.09
8	5	5	4	4	8	6	9	14	17	16	8	12	8	5	12	8	186	.08
...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	10	11	32	.01

TABLE X.—*International Classification.*—Continued.

Bertillon Numbers.	CAUSES OF DEATH.	1853.	1854.	1855.	1856.	1857.	1858.	1859.
VII.								
THE PUERPERAL STATE.								
134	Accidents of Pregnancy .....							
136	Other Accidents of Labor .....							
137	Septicemia, Puerperal .....	7	2	6	10	8	7	11
138	Albuminuria and Puerperal Eclampsia .....							
139	Phlegmasia Alba Dolens, Puerperal .....							
140	Other Puerperal Accidents—Sudden Death .....	5	7	9	14	13	24	14
VIII.								
DISEASES OF THE SKIN AND CELLULAR TISSUE.								
142	Gangrene .....	5	2	3	4	8	8	3
143	Carbuncle .....				1		1	1
144	Phlegmon: Acute Abscess .....	2		7	4	3	2	1
145	Other Diseases of the Skin and its Adnexa .....		3	2	3	6	1	1
IX.								
DISEASES OF THE ORGANS OF LOCOMOTION.								
146	Diseases of the Bones (non-Tuberculous) .....							
147	Arthritis, and Other Diseases of the Joints .....	3	1	2	7	6	6	9
X.								
MALFORMATIONS.								
150	Malformations, Congenital (still-births excepted) .....	3	7	11	5	12	14	14
XI.								
EARLY INFANCY.								
151	Congenital Debility, Icterus, and Sclerema .....	2	13	34	17	17	33	25
152	Other Diseases of Early Infancy .....	8	21	29	16	35	29	31
153	Lack of Care .....							
XII.								
OLD AGE.								
154	Senile Debility .....	58	67	84	76	119	114	117
XIII.								
AFFECTIONS PRODUCED BY EXTERNAL CAUSES.								
155	Suicide by Poison .....					1	2	2
156	Suicide by Asphyxia .....			1				
157	Suicide by Hanging or Strangulation .....			1	3	3	6	3
158	Suicide by Drowning .....						3	1
159	Suicide by Firearms .....							1
160	Suicide by Cutting Instruments .....							
161	Suicide by Jumping from High Places .....							
163	Other Suicides .....	3	3	6	1	4	2	2
164	Fractures .....	1	1		4			
166	Other Accidental Traumatism* .....	31	23	19	16	40	38	37
167	Burns and Scalds .....	9	9	14	12	7	6	13
169	Insolation .....							
170	Freezing .....							
171	Electrical Disturbances .....							
172	Accidental Drowning .....	13	15	18	13	20	24	24
174	Absorption of Deleterious Gases (Suicide excepted) .....	2	2		7	3		1
175	Other Acute Poisonings .....	1	3	6	4	3	5	4
176-1	Suffocation .....							
176-2	Injuries at Birth .....							
176-3	Other External Violence (Homicide) .....	3		9	1	1	1	1
XIV.								
ILL-DEFINED DISEASES.								
177	Dropsy .....	45	34	32	50	48	44	41
179	Unspecified or Ill-defined Causes of Death .....	115	151	188	306	288	310	263

\* Includes Accidental Gunshot Wounds, Injuries by Machinery, Railroad Accidents, Injuries by Horses and Vehicles, etc.



TABLE X.—*International Classification.*—Continued.

1860.	1861	1862.	1863.	1864	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...
9	7	4	14	14	13	7	7	12	10	16	18	9	17	16	18	18	17	17
...	...	...	...	...	...	2	7	4	4	6	7	4	5	13	13	6	5	11
13	19	23	21	23	18	22	19	2	23	22	27	32	24	28	22	21	24	15
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	11	7	8	6	12	6	7	6	4	7	10	12	12	5	12	11	8	10
...	1	...	...	...	1	2	...	1	2	1	2	...	1	...	1	1	3	...
7	11	4	7	9	7	8	15	10	4	9	11	10	10	18	9	18	7	13
4	6	5	2	3	1	5	7	4	4	2	5	2	7	6	7	5	5	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	15	8	9	7	5	5	6	12	11	15	5	11	18	15	16	27	15	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	13	11	13	8	10	12	17	16	15	14	15	17	15	17	15	11	26	32
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42	45	35	47	46	62	54	60	47	34	57	53	100	169	154	135	75	67	72
31	40	41	34	28	31	23	30	23	24	34	20	31	50	42	20	22	27	16
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
116	132	143	161	193	152	178	188	206	217	204	232	233	254	223	216	241	213	222
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	4	8	13	6	12	11	15	18	15	27	19	18	8	18	26	18	22	21
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
55	31	50	74	66	52	69	61	56	62	63	66	84	86	55	79	69	76	74
24	21	14	10	12	16	18	16	16	15	12	12	12	14	23	17	12	18	11
...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32	29	29	21	26	20	27	23	20	24	30	24	29	36	39	35	37	30	44
1	3	3	1	1	1	...	...	...	...	...	...	...	4	6	5	9	5	...
7	9	2	1	3	2	6	2	...	4	2	4	1	5	5	6	4	8	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	3	1	5	2	...	1	5	...	2	5	...	2	3	4	3	4	3	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
56	48	46	52	45	61	49	49	49	53	61	56	55	60	39	56	66	63	38
225	220	209	237	243	247	204	225	336	351	196	292	463	287	209	263	245	248	259

TABLE X.—*International Classification.*—Continued.

Bertillon Numbers.	CAUSES OF DEATH.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
VII.								
THE PUERPERAL STATE.								
134	Accidents of Pregnancy .....							2
136	Other Accidents of Labor .....							
137	Septicemia, Puerperal.....	9	15	22	28	16	12	19
138	Albuminuria and Puerperal Eclampsia.....	8	3	6	3	1	8	
139	Phlegmasia Alba Dolens, Puerperal.....	1						
140	Other Puerperal Accidents—Sudden Death.....	27	33	32	19	43	31	19
VIII.								
DISEASES OF THE SKIN AND CELLULAR TISSUE.								
142	Gangrene.....	14	11	14	6	10	15	19
143	Carbuncle .....	1		2	1	3	4	1
144	Phlegmon: Acute Abscess.....	14	5	17	14	18	18	21
145	Other Diseases of the Skin and its Adnexa.....	3	2	6	3	1	9	2
IX.								
DISEASES OF THE ORGANS OF LOCOMOTION.								
146	Diseases of the Bones (non-Tuberculous).....							
147	Arthritis, and other Diseases of the Joints.....	20	15	11	25	26	32	34
X.								
MALFORMATIONS.								
150	Malformations, Congenital (still-births excepted).....	19	13	26	21	19	22	15
XI.								
EARLY INFANCY.								
151	Congenital Debility, Icterus, and Sclerema.....	69	93	92	101	137	128	132
152	Other Diseases of Early Infancy .....	22	28	28	33	47	26	35
153	Lack of Care.....							
XII.								
OLD AGE.								
154	Senile Debility .....	220	273	247	263	275	293	267
XIII.								
AFFECTIONS PRODUCED BY EXTERNAL CAUSES.								
155	Suicide by Poison.....							
156	Suicide by Asphyxia .....							
157	Suicide by Hanging or Strangulation .....							
158	Suicide by Drowning .....							
159	Suicide by Firearms.....							
160	Suicide by Cutting Instruments.....							
161	Suicide by Jumping from High Places.....							
163	Other Suicides.....	13	10	23	31	25	22	20
164	Fractures.....							
166	Other Accidental Traumatism*.....	73	87	82	107	94	118	98
167	Burns and Scalds.....	13	21	16	17	18	20	19
169	Insolation.....							
170	Freezing.....							
171	Electrical Disturbances.....							
172	Accidental Drowning .....	22	33	29	40	27	41	42
174	Absorption of Deleterious Gases (Suicide excepted).....			19	8	12	11	10
175	Other Acute Poisonings.....	5	5	9	6	6	7	9
176-1	Suffocation.....							
176-2	Injuries at Birth .....							
176-3	Other External Violence (Homicide).....	1	1	4	6	3	2	3
XIV.								
ILL-DEFINED DISEASES.								
177	Dropsy .....	50	37	47	50	48	42	44
179	Unspecified or Ill-defined Causes of Death.....	302	279	402	316	208	61	116

\* Includes Accidental Gunshot Wounds, Injuries by Machinery, Railroad Accidents, Injuries by Horses and Vehicles, etc.

TABLE X.—*International Classification.*—Concluded.

1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	TOTAL AND PER- CENTAGE FOR 50 YEARS, 1853-1902.	
2	2	2	1	....	2	6	4	8	7	13	12	13	7	21	8	1	114	.05
10	25	18	17	19	12	30	21	32	24	16	19	34	26	49	42	33	76	.03
6	7	6	6	4	5	8	4	13	12	13	20	14	13	23	21	22	843	.35
23	20	25	19	19	15	29	27	13	7	7	6	2	3	3	2	5	320	.14
			1			1								1	....	....	6	.00
																	930	.39
6	15	19	26	24	16	21	17	13	....	....	3	....	....	16	14	6	482	.30
2	3	....	....	2	2	4	3	3	3	2	1	2	1	4	2	4	69	.03
13	15	19	17	13	6	5	....	1	7	24	13	29	6	5	7	6	489	.21
9	5	7	3	9	7	5	5	26	10	12	3	4	5	....	5	3	247	.10
26	23	15	18	25	20	17	14	19	23	22	18	12	18	7	6	13	26	.01
														2	1	1	686	.29
15	18	20	19	25	28	16	24	23	32	32	30	35	46	47	57	79	1,039	.44
157	211	230	195	225	251	245	224	373	344	390	372	257	594	316	315	450	7,096	2.99
37	34	51	55	41	75	37	53	66	73	28	40	26	21	16	18	25	1,651	.69
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	7	8	.00
276	278	290	227	198	185	256	183	187	282	293	253	205	228	268	234	261	10,321	4.33
....	....	3	2	4	9	3	5	8	6	6	9	14	5	13	11	12	118	.05
....	....	2	1	2	2	1	6	2	10	4	4	6	6	1	5	6	53	.02
....	....	7	8	1	5	1	4	15	3	8	6	9	10	13	13	10	133	.06
....	....	3	3	5	2	2	8	5	....	6	8	6	9	7	6	7	78	.03
....	....	4	....	13	2	4	3	11	12	11	8	7	10	15	12	116	.04	
....	....	2	....	2	3	1	4	....	4	2	4	2	6	8	4	6	49	.02
....	....	2	....	....	....	....	....	....	....	....	1	1	1	1	....	1	7	.00
17	16	7	5	8	3	8	1	5	....	....	....	....	....	....	....	1	520	.22
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	.00
97	122	95	126	129	124	187	160	118	163	141	146	156	158	185	163	189	4,550	1.90
23	17	27	20	20	18	21	26	28	28	25	41	21	28	33	36	34	933	.39
....	6	1	....	6	5	17	....	8	4	47	1	23	2	13	37	3	178	.08
....	1	1	2	1	....	....	2	1	2	2	3	4	3	....	14	5	41	.02
....	....	....	2	1	1	....	1	....	2	6	1	2	2	2	....	3	23	.01
58	39	46	52	71	52	48	47	52	61	39	40	60	45	64	57	47	1,794	.75
10	14	8	9	12	17	26	14	21	22	24	22	19	31	53	33	16	465	.20
6	7	12	5	10	15	9	13	6	11	12	8	10	6	14	6	9	309	.13
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11	11	.01
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	35	35	.02
2	2	5	3	2	1	4	3	9	6	2	12	13	15	10	7	11	193	.08
49	39	48	51	48	38	42	44	7	....	....	....	....	....	....	....	....	1,980	.83
90	54	74	88	88	69	62	99	57	60	52	33	33	26	33	42	59	9,247	3.88

## TABLE XI.—OCCUPATIONS AND AGES OF DECEDENTS

*Showing the Number and Occupation of Decedents for the year 1902  
and for a period of Fifty Years and Seven Months,  
1852 to 1902, inclusive.*

[AGES UNDER TWENTY EXCLUDED.]

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS. June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
I.						
TILLERS OF THE SOIL.						
Farmers.....	154	10,564	68.60	7,512	504,194	67.12
Florists.....	1	39	39.00	67	3,693	55.12
Gardeners.....	12	697	58.08	379	22,540	59.47
Total.....	167	11,300	67.66	7,958	530,427	67.03
II.						
PROFESSIONAL AND PERSONAL.						
Acrobats.....				1	24	24.00
Actors.....	1	39	39.00	17	583	34.29
Aeronauts.....				1	23	23.00
Architects.....	2	150	75.00	21	1,216	57.90
Artists.....	1	55	55.00	45	2,383	52.95
Assayers and Analytical Chemists.....				8	506	63.25
Athletes.....				1	25	25.00
Authors.....				9	926	69.56
Ball-players.....				2	65	32.50
Chiropodists.....				1	58	58.00
Civil Engineers.....	2	152	76.00	56	2,825	50.45
Clergymen.....	9	568	63.11	297	18,997	63.96
Couriers.....				2	113	56.50
Dancing-masters.....				3	173	57.67
Dentists.....	4	244	61.00	60	3,211	53.52
Designers.....	2	90	45.00	27	1,395	51.67

TABLE XL.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Draughtsmen.....	3	78	26.00	19	629	33.11
Electricians.....	1	38	38.00	29	1,039	35.83
Inspectors.....	2	95	47.50	26	1,300	50.00
Inventors.....	.....	.....	.....	16	1,054	65.87
Journalists (Editors and Reporters).....	2	105	52.50	57	2,671	46.86
Judges and Justices.....	.....	.....	.....	18	1,156	64.22
Lawyers.....	4	193	48.25	213	12,217	57.36
Lecturers.....	.....	.....	.....	2	108	54.00
Musicians.....	4	165	41.25	90	4,222	46.91
Nurses.....	.....	.....	.....	19	1,022	53.79
Photographers and Lithographers.....	1	50	50.00	33	1,543	46.76
Physicians.....	7	355	50.71	368	21,852	59.38
Professors and Teachers..	2	54	27.00	158	7,933	50.21
Public Officers.....	5	348	69.60	106	6,384	60.23
Publishers.....	.....	.....	.....	2	105	52.50
Sculptors.....	.....	.....	.....	1	41	41.00
Sheriffs and Policemen...	6	343	57.17	157	8,545	54.43
Students.....	4	97	24.25	94	2,156	22.94
Submarine Divers.....	.....	.....	.....	1	73	73.00
Telegraph and Telephone Operators.....	2	55	27.50	29	868	29.93
Treasurers.....	1	56	56.00	13	697	53.62
Trustees.....	3	173	57.67	4	229	57.25
Veterinary Surgeons..	1	69	69.00	10	539	53.90
Weighers and Gaugers...	.....	.....	.....	9	576	64.00
Total.....	69	3,572	51.77	2,025	109,482	54.07
III.						
OPTIONAL ACTIVITY.						
Agents and Canvassers...	7	359	51.29	248	12,897	52.00
Insurance.....	5	278	55.60	41	2,227	54.32
Real Estate.....	5	326	65.20	28	1,799	64.25
Auctioneers.....	.....	.....	.....	6	274	45.67
Bankers and Brokers.....	9	561	62.33	186	11,176	60.09
Bank Officers.....	6	390	65.00	77	4,955	64.35
Bartenders.....	7	248	35.43	63	2,260	35.87



TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS. June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Booksellers.....	1	78	78.00	4	291	72.75
Bottlers.....				10	360	36.00
Butchers and Marketmen.	10	565	56.50	341	17,709	51.93
Carriage Dealers.....				2	113	56.50
Coal and Wood....	6	320	53.33	22	1,285	58.41
Dry Goods.....				4	207	51.75
Fish and Oyster.....	2	114	57.00	33	1,966	59.58
Furniture.....				7	442	63.14
Hardware.....				8	499	62.37
Ice.....				7	368	52.57
Junk.....				19	1,079	56.79
Leather.....				2	81	40.50
Liquor.....	5	239	47.80	144	6,724	46.69
Lumber.....	2	123	61.50	20	1,127	56.35
Music.....	1	61	61.00	1	61	61.00
News.....				8	422	52.75
Oil.....	1	47	47.00	1	47	47.00
Provision.....				28	1,604	57.29
Shoe.....				14	757	54.07
Wool Waste.....				1	56	56.00
Clothiers.....	1	32	32.00	18	991	55.05
Collectors.....	1	48	48.00	9	428	47.56
Commercial Travelers....	5	213	42.60	39	1,772	45.44
Contractors and Builders.	7	327	46.71	145	8,600	59.31
Druggists and Apothecaries.....	7	371	53.00	140	9,610	68.64
Fruiterers.....	1	41	41.00	10	474	47.40
Grocers.....	25	1,481	59.24	532	29,067	54.64
Hotel and Inn-keepers...	3	166	55.33	188	10,379	55.21
Saloon and Restaurant.	10	491	49.10	224	10,318	46.06
Stable....	3	175	58.33	84	4,608	54.86
Store.....	5	287	57.40	74	3,982	53.81
Mail Carriers.....				12	530	44.17
Manufacturers.....	17	941	55.35	720	43,889	60.96
Stove.....				7	416	59.43
Merchants.....	36	2,140	59.44	1,475	85,379	57.88
Opticians.....	2	120	60.00	8	458	57.25
Organ and Piano Tuners...				6	402	67.00
Policy Brokers.....				1	24	24.00
Pork and Meat Cutters and Packers.....	1	32	32.00	26	1,164	44.77



TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS. June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Promoters . . . . .				1	25	25.00
Railroad Officials . . . . .	3	143	47.67	11	608	55.27
Ship Chandlers . . . . .				5	318	63.60
Tobacconists . . . . .				17	977	57.47
Traders . . . . .				283	14,259	50.39
Undertakers . . . . .	3	160	53.33	61	3,457	57.00
Total . . . . .	197	10,877	55.21	5,421	302,921	55.88
IV.						
OUTDOOR.— <i>Local.</i>						
Boat-builders . . . . .	1	63	63.00	33	2,062	62.48
Brick-makers . . . . .				8	352	44.00
Brick and Stone-layers . . . . .	1	84	84.00	15	747	49.80
Calkers . . . . .				15	1,033	68.87
Carpenters and Joiners . . . . .	82	4,962	60.51	2,503	141,227	56.42
Masons . . . . .	42	2,593	61.74	1,043	58,792	56.37
Millwrights . . . . .	1	87	87.00	41	2,805	68.41
Pavers . . . . .				3	129	43.00
Riggers . . . . .				25	1,343	53.72
Roofers . . . . .				8	415	55.33
Ship Carpenters . . . . .	3	187	62.33	89	6,127	68.84
Slaters . . . . .	1	42	42.00	10	440	44.00
Stone-cutters and Marble-workers . . . . .	12	710	59.17	338	16,816	49.75
Superintendents of Highways . . . . .				1	79	79.00
Tanners and Curriers . . . . .	1	55	55.00	63	4,014	63.71
Wheelwrights . . . . .	4	246	61.50	124	7,464	60.19
Total . . . . .	148	9,029	61.01	4,319	243,845	56.46
V.						
INDOOR.— <i>Active.</i>						
Axe and Scythe-grinders . . . . .				4	222	55.50
Bakers . . . . .	6	258	43.00	196	12,423	63.38

TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Basket-makers.....				7	404	57.71
Belt.....	2	110	55.00	15	870	58.00
Bobbin.....	1	56	56.00	7	385	55.00
Boiler.....	6	271	45.17	94	4,019	42.76
Bolt.....				3	158	52.67
Broom and Brush.....	2	92	46.00	18	905	50.28
Button.....				1	37	37.00
Cabinet.....	5	347	69.40	154	9,108	59.14
Card.....				4	201	50.25
Carriage, and Trimmers.	4	227	56.75	153	8,988	58.74
Chair.....				1	70	70.00
Comb.....				5	187	37.40
Frame.....	1	42	42.00	1	42	42.00
Mattress.....				1	38	38.00
Pattern.....	5	258	51.60	94	5,549	59.03
Pianoforte.....				3	157	52.33
Picker.....				5	303	60.06
Plane.....				1	79	79.00
Pump and Block.....				14	788	55.71
Reed.....				6	352	58.67
Sash and Blind.....				10	502	50.20
Scythe.....				1	83	83.00
Spindle.....				5	297	59.40
Stopper.....				1	22	22.00
Stove, and Mounters.....				5	245	49.00
Tool.....	3	142	47.33	48	2,518	42.46
Trunk.....				3	89	29.67
Umbrella.....				2	103	51.50
Wringer.....				4	112	28.00
Beamers.....				2	59	29.50
Bell-hangers.....				2	47	23.50
Blacksmiths and Farriers.	31	1,911	61.64	821	45,129	54.97
Bleachers and Fullers....	2	80	40.00	78	3,876	49.69
Bonnet-dressers.....				2	73	36.50
Brewers.....	1	52	52.00	25	1,227	49.08
Britannia-workers.....				1	65	65.00
Calico-printers.....				59	3,243	54.96
Car-builders.....				1	57	57.00
Stair.....				4	219	54.75
Carders.....	1	41	41.00	17	902	49.08
Card-grinders.....				3	138	46.00

TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Carvers.....				3	147	49.00
Confectioners:.....	4	150	37.50	56	2,574	45.96
Cooks and Caterers.....	17	919	54.06	157	7,750	49.36
Coopers.....	2	154	77.00	136	9,010	66.25
Coppersmiths.....				16	969	60.56
Cutters.....				8	394	49.25
Nail.....				12	490	40.83
Decorators.....				14	526	37.57
Distillers.....				1	77	77.00
Dyers.....	6	361	60.17	165	8,478	51.38
Founders, Brass and Iron.	1	71	71.00	23	1,150	50.00
Foundrymen.....				24	1,273	53.04
Gasfitters.....				65	2,830	43.54
Gilders.....				12	535	44.58
Gun and Locksmiths.....				28	1,525	54.46
Hatters.....	1	65	65.00	28	1,538	54.93
Heaters.....	1	57	57.00	7	297	41.78
Iron Rollers and Workers.....				21	1,006	47.90
Japanners.....				1	47	47.00
Lathers.....	1	26	26.00	9	376	41.78
Loom-fixers.....	8	424	53.00	15	733	48.87
Machinists.....	62	3,122	50.35	1,927	94,367	48.97
Mechanics.....	14	805	57.50	531	28,179	53.07
Melters.....				12	667	55.58
Miners.....	2	152	76.00	20	1,170	58.50
Moulders.....	16	815	50.94	404	21,916	54.25
Painters and Glaziers.....	66	3,409	51.65	1,169	57,568	49.25
Paperhangers.....				25	1,314	52.56
Plasterers and Stucco-workers.....	4	209	52.25	67	3,240	48.36
Platers.....				4	251	62.75
Electro.....				6	389	64.83
Gold.....				4	163	40.75
Plumbers.....	11	485	44.09	136	5,375	39.52
Pressmen.....				6	261	43.50
Refiners.....				5	189	37.80
Gold.....				4	179	44.75
Oil.....				1	76	76.00
Sugar.....				8	390	48.75
Soap-boilers.....				5	353	70.60
Steampipers.....	1	52	52.00	19	738	38.84

TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Superintendents and Overseers.....	29	1,735	59.83	452	25,455	56.32
Tallow Chandlers.....	..	..	..	4	322	80.50
Tinsmiths.....	3	210	70.00	159	7,759	48.80
Upholsterers.....	2	93	46.50	66	2,766	41.91
Wire-workers.....	3	113	37.67	19	798	42.00
Wood-carvers.....	..	..	..	4	149	37.25
Finishers.....	..	..	..	7	383	54.71
Turners.....	5	332	66.40	65	2,954	45.45
Total.....	329	17,646	53.64	7,811	403,387	51.64
VI.						
INDOOR.— <i>Activity Restricted.</i>						
Barbers.....	18	777	43.17	316	11,347	35.91
Bookbinders.....	1	46	46.00	29	1,350	46.55
Bookkeepers.....	10	571	57.10	480	22,018	45.87
Box-makers.....	3	200	66.67	27	1,349	49.96
Chain.....	..	..	..	5	261	52.20
Cigar.....	4	189	47.25	117	5,443	46.52
Clock and Watch.....	1	67	67.00	45	2,527	56.16
Harness and Saddle....	1	64	64.00	143	7,264	50.80
Paper.....	..	..	..	7	389	55.57
Rope.....	..	..	..	25	1,672	66.88
Sail.....	..	..	..	39	2,290	58.72
Shoe.....	14	818	58.43	684	39,697	58.04
Carders.....	2	115	57.50	2	115	57.50
Chasers.....	..	..	..	20	775	38.75
Clerks and Salesmen.....	84	3,307	39.37	1,578	59,795	37.89
Compositors.....	1	72	72.00	9	454	50.44
Die Cutters and Sinkers..	1	71	71.00	25	1,209	48.36
Enamelers.....	1	27	27.00	10	523	52.30
Engravers.....	5	244	48.80	159	7,839	49.30
File Cutters and Forgers..	3	156	52.00	109	4,508	41.36
Finishers.....	3	179	59.67	26	1,328	51.08
Brass.....	1	32	32.00	8	346	43.25
Folders.....	3	129	43.00	8	371	46.35

TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Glass-blowers.....				1	57	57.00
Jewelers.....	59	2,809	47.61	1,330	56,574	42.54
Shell.....				3	182	60.67
Knitters.....	1	24	24.00	4	106	26.50
Lapidaries.....	1	64	64.00	13	494	38.00
Millers.....	2	164	82.00	55	3,248	59.05
Operatives.....	59	2,689	45.58	2,899	128,024	44.13
Pearl-cutters.....				4	157	39.25
Polishers.....	2	97	48.50	50	2,299	45.98
Marble.....				1	62	62.00
Silver.....				2	59	29.50
Steel.....				1	42	42.00
Printers.....	6	222	37.00	230	12,952	56.31
Proofreaders.....				1	70	70.00
Roll-coverers.....				34	1,947	57.26
Rubber-workers.....	16	719	44.94	225	9,549	42.44
Silversmiths.....	4	144	36.00	151	6,863	45.45
Spinners.....	10	566	56.60	10	566	56.60
Tailors.....	19	1,157	60.89	490	27,351	55.82
Weavers.....	48	2,501	52.10	86	4,357	50.66
Wool-sorters.....	6	350	58.33	77	3,825	49.68
Total.....	389	18,570	47.74	9,538	431,654	45.26
VII.						
OCCUPATIONS AT LARGE.						
Army Officers.....				9	530	58.88
Naval.....	1	45	45.00	21	1,011	48.14
Bill-posters.....				3	162	54.00
Boatmen.....	1	26	26.00	35	1,914	54.69
Bootblacks.....				1	46	46.00
Brakemen.....	11	330	30.00	153	4,591	30.01
Butlers.....	1	30	30.00	8	285	35.63
Coachmen.....	4	221	55.25	223	9,974	44.73
Conductors and Motor-men.....	9	404	44.89	79	3,295	41.71
Drivers.....	6	222	37.00	59	2,197	37.24
Hack and Cab.....	4	133	33.25	68	2,943	43.28
Stage.....				8	398	49.75



TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Drovers .....	.....	.....	.....	2	83	41.50
Elevator Operators.....	1	39	39.00	4	166	41.50
Engineers and Firemen...	30	1,624	54.13	561	28,119	50.12
Expressmen.....	7	322	46.00	120	6,067	50.56
Fire Company Members...	2	78	39.00	14	670	47.85
Fishermen and Oyster-men.....	20	1,127	56.35	303	16,351	53.96
Footmen.....	.....	.....	.....	1	24	24.00
Highway Surveyors.....	.....	.....	.....	1	61	61.00
Hostlers.....	12	579	48.25	183	7,911	43.23
House Movers.....	.....	.....	.....	9	611	67.89
Icemen.....	.....	.....	.....	6	395	65.83
Janitors.....	15	915	61.00	134	7,364	54.95
Laborers.....	446	22,943	51.44	12,027	593,818	49.37
Lamplighters.....	.....	.....	.....	21	1,152	54.86
Laundrymen.....	3	134	44.67	28	1,217	43.46
Linemen.....	1	40	40.00	15	669	44.60
Longshoremen.....	4	146	36.50	11	459	41.73
Lumbermen.....	.....	.....	.....	5	266	53.20
Mail-carriers.....	1	41	41.00	13	596	45.85
Marines.....	1	21	21.00	1	21	21.00
Milkmen.....	2	82	41.00	25	936	37.44
Peddlers.....	10	487	48.70	219	11,005	50.25
Pilots.....	3	219	73.00	27	1,555	57.59
Porters.....	2	108	54.00	58	2,719	46.88
Railroad Station Agent...	1	40	40.00	1	40	40.00
Roofers.....	.....	.....	.....	2	126	63.00
Sailors.....	21	1,134	54.00	354	17,298	48.86
Scissors-grinders.....	.....	.....	.....	1	72	72.00
Sea-captains or Ship-masters.....	3	174	58.00	211	15,009	71.13
Servants.....	1	57	57.00	31	1,379	44.48
Sextons.....	.....	.....	.....	13	813	62.54
Sinkers of Artesian Wells.....	.....	.....	.....	3	163	54.33
Soldiers.....	6	163	27.17	164	5,067	30.90
Stevedores.....	1	35	35.00	20	936	46.80
Stewards.....	2	86	43.00	30	1,414	47.13
Switchmen, Gatemen, etc.	1	39	39.00	31	1,733	55.90
Teamsters.....	58	2,831	48.81	823	38,662	46.98
Theatrical Managers.....	.....	.....	.....	3	137	45.67
Waiters.....	12	450	37.50	149	5,993	40.22



TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Watchmen... ..	13	788	60.62	222	12,782	57.58
Whitewashers... ..				8	452	56.50
Wood-sawyers... ..				5	239	47.80
Total... ..	716	36,113	50.44	16,526	811,896	49.13
VIII.						
EMPLOYMENTS OF WOMEN.						
Actresses .. .				3	112	37.33
Agents .. .				1	59	59.00
Artists .. .	1	49	49.00	7	370	52.86
Authoresses .. .	1	66	66.00	1	66	66.00
Bakers .. .	1	42	42.00	1	42	42.00
Basket-makers .. .				2	149	74.50
Box .. .	1	29	29.00	6	179	29.83
Broom and Brush .. .				1	34	34.00
Braid .. .				1	66	66.00
Cap .. .				1	28	28.00
Chain .. .	1	29	29.00	6	206	34.33
Cigar .. .				8	243	30.37
Dress, and Seamstresses	14	614	43.86	429	17,530	40.86
Boarding-house Keepers .. .				27	1,677	62.11
Boatwomen .. .				1	60	60.00
Bookkeepers .. .	1	30	30.00	24	739	30.79
Charwomen .. .				1	60	60.00
Clerks and Saleswomen... ..	7	187	26.71	63	1,805	28.65
Compositors .. .	1	34	34.00	2	62	31.00
Cooks .. .	6	321	53.50	69	3,666	53.13
Farming .. .				2	124	62.00
Folders .. .	1	20	20.00	1	20	20.00
Hairdressers .. .				2	55	27.50
Jewelers .. .	2	56	28.00	25	704	28.16
Laboring .. .	2	84	42.00	18	783	43.50
Lace-knitters .. .				1	49	49.00
Laundresses .. .	5	211	42.50	58	2,852	49.17
Matrons .. .	1	46	46.00	3	148	49.33
Midwives .. .				2	128	64.00
Milliners .. .	1	29	29.00	67	2,375	35.45

TABLE XI.—OCCUPATIONS AND AGES.—Continued.

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
Modistes .....				1	38	38.00
Musicians .....				4	125	31.25
Nurses .....	10	461	46.10	149	8,452	56.72
Oculists .....				1	59	59.00
Operatives .....	36	1,282	35.61	1,201	38,639	32.18
Physicians .....	1	30	30.00	12	677	56.42
Postmistresses .....				1	28	28.00
Public Officers .....				2	110	55.00
Rubber-workers .....	1	23	23.00	25	721	28.84
Sculptors .....				1	30	30.00
Servants .....	38	1,624	42.74	640	30,283	47.32
Sisters of Mercy .....				39	1,578	40.46
Stenographers .....	1	43	43.00	2	66	33.00
Stewardesses .....				2	114	57.00
Storekeepers .....	5	207	41.40	8	370	46.25
Students .....	1	21	21.00	1	21	21.00
Superintendents .....				2	126	63.00
Tailoresses .....	2	119	59.50	154	7,239	47.01
Teachers .....	9	348	38.67	275	13,696	49.80
Music .....	1	28	28.00	2	52	26.00
Telegraph and Telephone Operators .....				10	299	29.90
Typewriters .....	1	20	20.00	2	62	31.00
Upholsterers .....				1	34	34.00
Waitresses .....				12	341	28.42
Weavers .....	12	468	39.00	12	468	39.00
Total .....	164	6,521	39.76	3,392	138,019	40.70

TABLE XI.—OCCUPATIONS AND AGES.—(RECAPITULATION.)

OCCUPATIONS.	STATE OF RHODE ISLAND.					
	1902.			FIFTY YEARS AND SEVEN MONTHS.		
				June 1, 1852, to December 31, 1902.		
	Total Mortality.	Aggregate Ages.	Average Age.	Total Mortality.	Aggregate Ages.	Average Age.
I.						
TILLERS OF THE SOIL . . . . .	167	11,300	67.66	7,958	530,427	67.03
II.						
PROFESSIONAL AND PERSONAL.	69	3,572	51.77	2,025	109,482	54.07
III.						
OPTIONAL ACTIVITY . . . . .	197	10,877	55.21	5,421	302,921	55.88
IV.						
OUTDOOR.— <i>Local</i> . . . . .	148	9,029	61.01	4,319	243,845	56.46
V.						
INDOOR.— <i>Active</i> . . . . .	329	17,646	53.64	7,811	403,387	51.64
VI.						
INDOOR.— <i>Activity Restricted</i>	389	18,570	47.74	9,538	431,654	45.26
VII.						
OCCUPATIONS AT LARGE . . . . .	716	36,113	50.44	16,526	811,896	49.13
VIII.						
EMPLOYMENTS OF WOMEN . . .	164	6,521	39.76	3,392	138,019	40.70
ALL CLASSES . . . . .	2,179	113,628	52.15	56,990	2,971,631	52.14





TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.	CAUSES OF DEATH.																											
		Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fevers, Malarial.	Fevers, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
Trustees.....	3	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..
Veterinary Surgeons. .	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total.....	61	6	1	10	..	3	..	..	..	3	9	2	..	..	..	..	..	2	4	..	..	6	2	1	1	7	..	..	4
III.		OPTIONAL ACTIVITY.																											
Agents and Canvassers.....	6	1	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	
Insurance .....	5	..	1	1	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	
Real Estate.....	5	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	2	..	..	..	..	..	..	..	
Bankers and Brokers.....	9	..	3	3	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	2	..	1	1	..	2	..	..	..	
Bank Officers.....	6	..	1	1	..	1	..	..	1	..	..	..	..	..	..	..	..	1	1	..	1	1	..	1	1	..	1	..	
Bartenders .....	7	1	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	1	1	..	1	1	..	..	1	..	..	..	
Booksellers .....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	
Butchers and Marketmen .....	10	..	2	2	..	..	..	..	..	..	2	1	..	..	..	..	..	..	1	1	..	3	1	1	..	..	..	..	..



TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.	Accidents.																										
		Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fevers, Malarial.	Fevers, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
Clothiers.....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	1	..	..	..	..
Coal and Wood Dealers..	6	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	1	..	2	..	..	..	..
Fish and Oyster.....	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fruit.....	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Liquor.....	5	..	..	..	..	..	1	1	1	1	1	1	1	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..
Music.....	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lumber.....	2	..	..	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oil.....	1	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Collectors.....	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Commercial Travelers.....	5	..	1	1	..	..	..	..	2	..	1	1	..	..	..	..	..	1	1	..	1	..	..	1	..	..	..	..
Contractors and Builders.	7	3	1	..	..	..	..	1	1	1	1	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..
Druggists and Apothecaries	7	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	2	..	..	3	1	1	..	2	..	..	..
Grocers.....	23	1	3	..	1	..	..	1	1	3	..	..	..	..	..	..	..	7	1	..	4	1	..	..	..	..	..	..
Hotel and Inn-keepers.....	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	1	..	..	1	..	..	..
Saloon and Restaurant.	10	..	..	..	..	..	..	..	3	..	..	..	..	..	..	1	1	1	1	..	3	1	..	..	..	..	..	..
Stable.....	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..
Store.....	5	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..
Manufacturers.....	15	1	1	1	..	..	1	1	1	3	..	..	..	..	..	..	..	..	..	..	9	..	..	..	..	..	..	..
Merchants.....	32	2	5	..	1	1	2	..	3	..	1	1	1	1	1	1	1	1	1	1	3	4	1	..	3	1	1	1

TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.		Whole Number.	Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fevers, Malarial.	Fevers, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
Opticians..	.....	2																					2							
Pork and Meat Cutters and Packers.	.....	1					1																							
Railroad Officials	.....	3											1								2									
Undertakers.....	.....	1				1																								
Total.....	.....	186	10	1	26	..	2	3	2	4	7	22	6	..	2	..	..	..	..	4	30	..	32	8	4	..	14	..	2	7
IV.																														
OUTDOOR.—Local.																														
Brick and Stone-layers.....	.....	1																							1	..	..	..	..	..
Carpenters and Joiners.....	.....	80	5	4	11	..	2	..	1	1	9	6	..	1	2	1	..	..	..	15	..	..	10	2	2	1	7	..	..	..
Masons.....	.....	40	..	2	5	..	..	..	1	1	2	3	1	1	..	..	..	..	1	9	..	7	..	..	..	..	6	2	..	..
Millwrights.....	.....	1																							1	..	..	..	..	..
Ship Carpenters.....	.....	3																		1			2	..	..	..	..	..	..	..
Slaters.....	.....	1																						1	..	..	..	..	..	..
Stone-cutters and Marble-workers....	.....	12		2	..	..	..	..	..	..	1	3	..	1	..	..	..	..	..		1	..	..	1	1	..	1	1	..	1



TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.															
	Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fever, Typhoid, etc.
Blacksmiths and Farriers.....	30	5	1	1	1	1	1	1	2	3	1	1	7	8	1	1
Bleachers and Fullers .....	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Brewers .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Carders.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Confectioners.....	3	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1
Cooks and Caterers.....	17	1	1	1	1	1	1	1	2	3	1	1	1	3	2	1
Coopers.....	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dyers.....	6	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
Founders, Brass and Iron.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hatters.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Heaters.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lathers .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Loom-fixers.....	8	3	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Machinists.....	62	2	5	1	1	1	3	1	4	18	1	1	10	1	5	1
Mechanics.....	13	1	2	1	1	1	1	1	2	2	1	1	2	2	1	1
Miners .....	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Moulders .....	15	1	3	2	2	1	1	1	1	1	1	1	2	5	1	1
Painters and Glaziers.....	62	9	2	6	1	1	2	1	2	12	1	1	1	2	5	1
Painters, Carriage.....	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Stomach Diseases. 1  
Pneumonia. 1  
Pleurisy. 1  
Old Age. 1  
Liver Diseases. 1  
Bright's Dis. of Kidneys. 1  
Insanity. 1  
Influenza. 1  
Heart Diseases. 1  
Fever, Typhoid, etc. 1  
Fever, Malarial. 1  
Erysipelas. 1  
Epilepsy. 1  
Enteritis. 1  
Dysentery. 1  
Diabetes. 1  
Consumption. 1  
Cancer. 1  
Bronchitis. 1  
Brain, Diseases of. 1  
Bowel Diseases. 1  
Bladder, Diseases of. 1  
Asthma. 1  
Apoplexy and Paralysis. 1  
Alcoholism. 1  
Accidents. 1

TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.	Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fever, Malarial.	Fever, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
		Plasterers and Stucco-workers.....	Plumbers.....	Steampipers.....	Superintendents and Overseers.....	Tinsmiths.....	Upholsterers.....	Wire-workers.....	Wood-turners.....	Total.....	Barbers.....	Bookbinders.....	Bookkeepers and Accountants.....																
	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	27	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	318	23	33	4	5	3	7	7	17	54	3	3	2	1	1	1	1	1	156	1	3	48	5	4	1	24	5	2	4
VI.																													
Indoor.—Activity Restricted.																													
	18	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1







TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.																												
		Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fevers, Malarial.	Fevers, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
Coachmen.....	4	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Conductors and Motormen.....	8	..	2	1	..	..	..	..	1	1	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..
Drivers.....	6	1	..	..	..	..	..	..	3	3	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Hack and Cab.....	4	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Elevator Operators.....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Engineers and Firemen.....	26	2	1	3	..	..	..	..	2	2	1	1	1	1	1	1	1	1	2	..	1	7	1	1	2	..	..	..	..
Expressmen.....	6	1	..	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Fire Company Members.....	2	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fishermen and Oystermen.....	20	5	1	2	..	..	2	..	3	1	1	1	1	..	..	..	1	1	1	1	..	1	1	1	1	..	..	..	..
Hostlers.....	12	3	1	1	1	1	..	..	4	..	..	..	..	..	..	..	..	1	1	1	..	..	1	..	..	..	..	..	..
Janitors.....	15	..	3	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	4	..	..	4	..	..	..	..	..	2	..
Laborers.....	431	48	628	3	5	3	6	6	18	91	1	6	11	1	1	1	8	65	1	1	1	46	4	11	1	140	5	10	5
Laundrymen.....	3	..	..	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Linemen.....	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Longshoremen.....	4	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..
Mail-carriers.....	1	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Marines.....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Milkmen.....	2	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..

TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.	CAUSES OF DEATH.																										
		Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Epilepsy.	Erysipelas.	Fever, Malarial.	Fever, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
Naval Officers.....	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Peddlers.....	10	..	1	..	..	..	..	..	..	..	4	..	..	..	..	..	1	..	..	..	1	1	..	..	2	..	..	..
Pilots.....	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..
Porters.....	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Railroad Employees.....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	1	..	..	..
Sailors.....	21	2	1	1	1	..	..	..	..	..	3	..	..	..	..	..	4	5	1	..	1	1	..	..	1	..	..	..
Sea-captains or Ship-masters.....	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..
Servants.....	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Soldiers.....	6	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	
Stewards.....	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Stewards.....	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Switchmen, Gatemen, etc. ....	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Teamsters.....	58	8	3	2	1	1	..	1	1	2	11	..	1	2	2	..	1	7	..	..	9	2	1	..	6	1	..	..
Waiters.....	11	2	..	..	..	..	..	..	..	..	6	..	..	..	..	..	1	1	..	1	..	..	1	..	..	..	..	..
Watchmen.....	13	1	..	6	..	..	..	..	..	1	..	..	..	..	..	..	..	3	..	..	..	..	1	..	1	..	..	..
Total.....	694	85	11	52	6	8	4	9	7	30	138	4	7	14	2	4	19	97	2	4	74	8	19	1	63	6	12	8

TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.		Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fever, Malarial.	Fever, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
VIII. EMPLOYMENTS OF WOMEN.	1	1	1																			1								
	1	1																	1											
	1																												1	
	1	1										1																		
	1	1										1																		
	1	1										1																		
	1	1										1																		
	7	1									1																3			
	1	1									1																			
	1										1																			
	6	1	2								1																			
	14	1								4															1					
	1											1																		
	2													1																
	2																													
	2																													
	5										1													2						

TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—Continued.

OCCUPATIONS.	Whole Number.	Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Euteritis.	Epilepsy.	Erysipelas.	Fever, Malarial.	Fever, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
Matrons.	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Milliners	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..
Nurses	9	..	..	..	..	..	..	1	1	1	3	..	..	..	..	..	..	1	1	..	1	..	..	..	..	1	..	..	..
Operatives.	35	1	..	2	..	..	..	1	1	3	15	..	2	..	1	..	..	2	3	..	1	2	1	..	..	..	..	..	..
Physicians.	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Rubber-workers	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Servants.	31	1	1	1	..	1	1	1	..	..	9	1	1	..	..	..	..	1	10	..	..	..	..	2	1	3	..	..	1
Stenographers.	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Storekeepers.	5	1	1	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1
Students.	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tailoresses	2	..	1	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Teachers	8	..	1	1	..	..	..	..	3	..	..	..	..	..	..	..	..	3	..	..	1	..	..	..	..	..	..	..	..
Music.	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Typewriters.	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Weavers.	12	1	1	1	..	..	..	..	1	3	..	..	..	..	..	..	..	..	..	..	1	3	1	..	..	1	..	..	..
Total	153	7	10	10	..	1	3	1	12	45	1	5	2	1	..	..	..	52	1	..	5	12	4	3	1	8	1	3	2

TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—(RECAPITULATION.)

OCCUPATIONS.	Whole Number.	Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fever, Malarial.	Fever, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
I. TILLERS OF THE SOIL.....	157	10	2	21	..	3	..	5	4	14	6	1	1	3	1	1	1	..	35	1	..	19	3	15	..	8	..	2	2
II. PROFESSIONAL AND PERSONAL...	61	6	1	10	..	3	..	..	..	3	9	2	..	..	..	..	..	2	4	..	..	6	2	1	1	7	..	..	4
III. OPTIONAL ACTIVITY .....	186	10	1	26	..	2	3	2	4	7	22	6	..	2	..	..	..	4	30	..	..	32	8	4	..	14	..	2	7
IV. OUTDOOR.— <i>Local</i> .....	143	5	6	18	..	3	..	1	2	12	14	1	2	4	1	..	..	1	27	..	..	19	4	4	2	14	..	3	..
V. INDOOR.— <i>Active</i> .....	318	23	3	34	..	5	3	7	7	17	54	3	3	2	1	1	1	1	56	1	3	48	5	4	1	24	5	2	4



TABLE XII.—OCCUPATIONS AND CAUSES OF DEATH, 1902.—(RECAPITULATION.)—Concluded.

OCCUPATIONS.	Whole Number.	Accidents.	Alcoholism.	Apoplexy and Paralysis.	Asthma.	Bladder, Diseases of.	Bowel Diseases.	Brain, Diseases of.	Bronchitis.	Cancer.	Consumption.	Diabetes.	Dysentery.	Enteritis.	Epilepsy.	Erysipelas.	Fever, Malarial.	Fever, Typhoid, etc.	Heart Diseases.	Influenza.	Insanity.	Bright's Dis. of Kidneys.	Liver Diseases.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Stomach Diseases.	Suicide.
VI.																													
INDOOR.— <i>Activity Restricted</i> ..	367	26	5	30	2	1	4	5	3	23	101	4	3	9	1	..	3	9	44	2	2	28	10	11	2	25	3	5	6
VII.																													
OCCUPATIONS AT LARGE.....	694	85	11	52	6	8	4	9	7	30	138	4	7	14	2	4	..	19	97	2	4	74	8	19	1	63	6	12	8
VIII.																													
EMPLOYMENTS OF WOMEN.....	153	7	..	10	...	...	1	3	1	12	45	1	5	2	1	..	...	5	21	..	5	12	4	3	1	8	1	3	2
ALL CLASSES.....	2,079	172	29	201	8	25	15	32	28	118	389	22	21	36	7	6	4	41	314	6	14	238	44	61	8	163	15	29	33



TABLE XII.—SUPPLEMENTAL DISEASES.—Continued.

OCCUPATIONS.	Whole Number.	Abscess of Jaw.	Abscess, Mediastinal.	Angina Pectoris.	Appendicitis.	Carbuncle.	Diphtheria.	Empyema.	Fistula in Ano.	Gallstones.	Hernia.	Lead Poisoning.	Leukemia.	Locomotor Ataxia.	Mastoiditis.	Myelitis.	Neuritis.	Orechitis.	Ovarian Cyst.	Phlebitis.	Pott's Disease.	Prostatic Disease.	Psoas Abscess.	Puerperal Septicæmia.	Salpinctitis.	Scarlet Fever.	Smallpox.	Synovitis.	Syphilis.	Tuberc Dorsalis.	Fibroid of Uterus.	Stricture of Urethra.	Varicose Ulcers.
Firemen .....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Gardeners .....	3	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Grocers .....	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Jewelers .....	5	..	..	1	..	..	..	1	..	..	..	..	1	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..
Laborers .....	15	..	1	1	1	3	..	..	..	2	..	..	..	1	..	1	..	..	..	..	..	..	..	..	1	1	4	..	1	..	..	..	..
Manufacturers .....	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Masons .....	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Mechanics .....	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Merchants .....	4	..	..	1	1	..	1	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Motormen .....	1	1	..	..	1	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moulders .....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Musicians .....	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Operatives .....	3	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Plumbers .....	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..
Police-men .....	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rubber-workers .....	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Spinners .....	2	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..

TABLE XII.—SUPPLEMENTAL DISEASES.—Continued.

OCCUPATIONS.	Whole Number.	Abscess of Jaw.	Abscess, Mediastinal.	Angina Pectoris.	Appendicitis.	Carbuncle.	Diphtheria.	Empyema.	Fistula in Ano.	Gallstones.	Hernia.	Lead Poisoning.	Leukemia.	Locomotor Ataxia.	Mastoiditis.	Myelitis.	Neuritis.	Orchitis.	Ovarian Cyst.	Phlebitis.	Pott's Disease.	Prostate Disease.	Psoas Abscess.	Puerperal Septicæmia.	Salpingitis.	Scarlet Fever.	Smallpox.	Synovitis.	Syphilis.	Tabes Dorsalis.	Fibroid of Uterus.	Stricture of Esophagus.	Varicose Ulcers.
Students.....	1			1																													
Superintendents.....	2			1																													
Tailors.....	2												1																				
Telegraph Operators.....	1																																
Tinsmiths.....	1																																
Treasurers.....	1																																
Undertakers.....	2								1																								
Waiters.....	1																																
Weavers.....	2																																
Wire-workers.....	1																																
Total.....	89	1	1	9	19	2	6	1	4	1	6	1	3	6	3	1	1	1	1	1	1	2	1	1	1	2	7	1	5	3	1	1	1

TABLE XII.—SUPPLEMENTAL DISEASES.—Concluded.

OCCUPATIONS.	Whole Number.	Abscess of Jaw.	Abscess, Mediastinal.	Angina Pectoris.	Appendicitis.	Carbuncle.	Diphtheria.	Empyema.	Fistula in Ano.	Gallstones.	Hernia.	Lead Poisoning.	Leukemia.	Locomotor Ataxia.	Mastoiditis.	Myelitis.	Neuritis.	Ochritis.	Ovarian Cyst.	Pileblis.	Pott's Disease.	Prostate Disease.	Psoas Abscess.	Puerperal Septicæmia.	Salpingitis.	Scarlet Fever.	Smallpox.	Synovitis.	Syphilis.	Tabs Dorsalis.	Triboid of Uterus.	Stricture of Urethra.	Varicose Ulcers.
FEMALES.																																	
Artists.....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nurses.....	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Operatives.....	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Servants.....	7	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	..
Teachers.....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total.....	11	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	1	1	..	..	..	1	1	1	..	..
Grand Total.....	100	1	1	9	21	2	7	1	4	1	6	1	3	6	3	1	1	1	2	1	1	2	1	1	1	2	7	1	5	4	1	2	..





## RESULTS AND OBSERVATIONS.



# GENERAL SUMMARY.

The number of births registered in the State of Rhode Island, during the year 1902, was eleven thousand two hundred and twenty-seven (11,227); the number of marriages, four thousand one hundred and thirty-six (4,136); and the number of deaths, seven thousand nine hundred and fifty-five (7,955).

TABLE XIII.

*General Results of Registration for Ten Years, 1854-1863, and for each of the last Thirty-nine years.*

Years.	Whole Number of Births.	Still-born.	Living Births.	Marriages.	Deaths.
1854-1863 .....	38,042 .....	1,471 .....	36,571 .....	14,943 .....	24,230 .....
1864 .....	3,892 .....	138 .....	3,754 .....	1,844 .....	3,360 .....
1865 .....	3,955 .....	177 .....	3,778 .....	1,896 .....	3,405 .....
1866 .....	4,902 .....	172 .....	4,730 .....	2,318 .....	2,970 .....
1867 .....	5,127 .....	163 .....	4,964 .....	2,344 .....	2,889 .....
1868 .....	5,372 .....	212 .....	5,160 .....	2,285 .....	2,912 .....
1869 .....	5,245 .....	220 .....	5,025 .....	2,289 .....	3,382 .....
1870 .....	5,215 .....	234 .....	4,981 .....	2,302 .....	3,238 .....
1871 .....	5,678 .....	223 .....	5,455 .....	2,336 .....	3,344 .....
1872 .....	6,143 .....	202 .....	5,941 .....	2,537 .....	4,247 .....
1873 .....	6,022 .....	228 .....	5,794 .....	2,630 .....	4,403 .....
1874 .....	6,466 .....	277 .....	6,189 .....	2,511 .....	4,229 .....
1875 .....	6,508 .....	246 .....	6,262 .....	2,485 .....	4,317 .....
1876 .....	6,329 .....	224 .....	6,105 .....	2,253 .....	4,116 .....
1877 .....	6,235 .....	242 .....	5,993 .....	2,282 .....	4,450 .....
1878 .....	6,714 .....	248 .....	6,466 .....	2,321 .....	4,441 .....
1879 .....	6,350 .....	216 .....	6,134 .....	2,396 .....	4,472 .....
1880 .....	6,295 .....	192 .....	6,103 .....	2,769 .....	4,829 .....
1881 .....	6,761 .....	264 .....	6,497 .....	2,750 .....	5,016 .....
1882 .....	6,825 .....	253 .....	6,572 .....	2,634 .....	5,074 .....
1883 .....	7,046 .....	253 .....	6,793 .....	2,611 .....	5,282 .....
1884 .....	7,305 .....	272 .....	7,033 .....	2,558 .....	5,141 .....
1885 .....	7,028 .....	271 .....	6,757 .....	2,488 .....	5,389 .....
1886 .....	7,621 .....	293 .....	7,328 .....	2,750 .....	5,849 .....
1887 .....	7,668 .....	276 .....	7,392 .....	2,899 .....	6,340 .....

TABLE XIII.—Concluded.

Years.	Whole Number		Living		
	of Births.	Still-born.	Births.	Marriages.	Deaths.
1888.....	7,840	295	7,545	3,022	6,594
1889.....	8,220	329	7,891	3,029	6,259
1890.....	8,550	296	8,254	3,195	6,034
1891.....	9,426	272	9,154	3,320	6,620
1892.....	9,270	343	8,927	3,502	7,396
1893.....	10,048	412	9,636	3,544	7,440
1894.....	9,985	392	9,593	3,271	7,160
1895.....	10,249	367	9,882	3,497	7,535
1896.....	11,174	424	10,750	3,327	7,504
1897.....	11,218	423	10,795	3,137	7,110
1898.....	11,143	413	10,730	3,278	6,905
1899.....	11,220	389	10,831	3,433	7,458
1900.....	11,458	374	11,084	3,936	8,823
1901.....	11,761	469	11,292	3,846	7,966
1902.....	11,689	462	11,227	4,136	7,955

During the period of forty-nine years there were recorded, in Rhode Island, 337,995 births, of which number 12,627 were still-born, and 325,368 were living children.

During the same period there were recorded 124,937 marriages, or 249,874 persons married; and 236,984 deaths.

These results show that in every 26.8 births there was one still-born child, or that in every 1,000 births there were about 37 still-born and 963 living children.

The same results also show that the ratio of whole number of living births to the whole number of persons married, and to the whole number of decedents respectively, during the same period, was as follows:

	Of	Of
	persons married.	Deaths.
For every 100 living births there were.....	76.8.....	and.....72.8

The number of births in 1902 was 65 less than that of the previous year; the number of marriages 290 greater, or 580 more persons married; and there was a decrease of 11 deaths.

For every 100 births there were:

	Of	Of
	persons married.	Deaths.
In 1898.....	61.1.....	and.....64.4
In 1899.....	63.4.....	and.....68.9
In 1900.....	71.0.....	and.....79.6
In 1901.....	68.1.....	and.....70.5
In 1902.....	73.7.....	and.....70.9

TABLE XIV.

*Comparative Exhibit of Births, Marriages, and Deaths in each Town in Rhode Island, in each of the Six Years 1897-1902, and Excess of Births over the Deaths in 1902.*

TOWNS AND DIVISIONS OF THE STATE.	BIRTHS.						MARRIAGES.						DEATHS.						Excess of Births over Deaths.						
	1897.		1898.		1899.		1900.		1901.		1902.		1897.		1898.		1899.			1900.		1901.		1902.	
Barrington .....	35	33	34	22	41	25	7	11	6	11	9	8	22	19	21	21	25	29	21	25	29	25	29	-4	
Bristol .....	143	138	141	154	142	147	40	40	51	37	31	49	130	109	144	170	121	122	170	121	122	122	122	25	
Warren .....	158	139	149	185	147	174	37	36	24	37	53	37	79	84	86	106	94	90	106	94	90	90	90	75	
BRISTOL COUNTY.....	336	310	324	361	330	346	84	87	81	85	93	94	231	212	251	297	240	250	297	240	250	250	250	96	
Coventry .....	122	137	148	133	160	158	17	18	20	26	25	27	103	81	92	105	114	96	105	114	96	96	96	62	
East Greenwich .....	61	39	49	18	44	56	31	31	36	17	25	23	58	53	63	70	56	52	70	56	52	52	52	4	
West Greenwich .....	12	7	8	12	9	7	.....	.....	.....	1	1	1	9	9	10	18	6	12	18	6	12	12	12	-5	
Warwick .....	703	798	742	713	758	707	123	156	181	191	206	217	366	373	409	515	425	385	515	425	385	385	385	322	
KENT COUNTY... ..	898	981	947	876	971	928	171	205	239	235	257	268	536	516	574	708	601	515	708	601	515	515	515	383	
Jamesstown.....	15	20	14	15	20	12	4	2	2	3	6	14	17	12	20	19	14	23	19	14	23	23	23	-11	
Little Compton .....	15	17	31	21	25	41	11	7	8	5	5	6	22	17	18	27	19	16	27	19	16	16	16	25	
Middletown .....	39	25	31	33	34	26	5	3	4	1	3	9	11	15	21	22	14	16	22	14	16	16	16	10	
Newport City .....	556	577	594	599	576	537	155	150	161	206	163	178	370	349	391	423	386	424	423	386	424	424	424	113	
New Shoreham .....	16	20	21	13	13	17	4	10	8	10	13	8	24	17	33	33	14	20	33	14	20	20	20	-3	
Portsmouth .....	33	36	43	37	54	43	7	6	13	14	6	11	18	28	38	34	31	33	34	31	33	33	33	10	
Tiverton .....	45	35	77	66	60	73	20	11	20	18	14	18	49	56	53	52	69	76	52	69	76	76	76	-3	
NEWPORT COUNTY.....	719	730	811	784	782	749	206	189	216	257	212	244	511	494	564	610	547	608	610	547	608	608	608	111	

TABLE XIV.—Concluded.

TOWNS AND DIVISIONS OF THE STATE.	BIRTHS.					MARRIAGES.					DEATHS.					Excess of Births over Deaths.			
	1897.	1898.	1899.	1900.	1901.	1902.	1897.	1898.	1899.	1900.	1901.	1902.	1897.	1898.	1899.		1900.	1901.	1902.
Burrillville.....	131	167	160	131	130	168	35	32	28	35	51	58	92	65	109	111	96	106	62
CENTRAL FALLS.....	511	563	556	610	516	545	119	148	138	161	154	152	223	218	254	352	300	287	258
Cranston *.....	292	227	298	280	286	285	50	69	64	66	47	82	183	172	155	188	194	186	99
Cumberland.....	237	238	254	236	238	214	51	62	48	60	83	65	166	146	149	154	143	151	63
East Providence.....	267	232	265	252	276	262	60	74	64	73	92	96	163	146	141	211	162	171	91
Foster.....	22	21	22	15	21	13	13	15	5	10	4	12	28	17	32	19	25	27	-14
Glocester.....	24	23	24	23	23	28	9	7	9	11	7	5	30	27	36	32	30	25	3
Johnston.....	364	197	138	149	117	98	45	17	23	12	8	11	204	130	78	70	57	58	40
Lincoln.....	289	221	273	254	265	282	50	63	33	57	57	75	110	115	103	148	148	144	138
North Providence.....	52	67	55	59	43	60	4	4	1	6	6	4	38	35	35	42	46	50	10
North Smithfield.....	82	81	58	55	50	54	25	19	13	19	12	13	52	52	32	39	37	27	27
PAWTUCKET.....	988	1,067	970	1,025	1,019	959	291	270	318	418	375	366	595	543	625	792	667	737	322
PROVIDENCE CITY.....	4,119	4,256	4,293	4,503	4,696	4,719	1,458	1,566	1,670	1,900	1,875	2,041	2,811	2,929	3,162	3,678	3,441	3,394	1,325
Scituate.....	86	58	65	56	53	58	21	25	29	18	15	15	68	53	53	69	88	74	16
Smithfield.....	50	38	45	53	39	51	16	11	17	19	23	10	41	31	37	51	28	35	16
Woonsocket.....	861	808	842	960	988	1,006	223	228	262	283	287	305	465	458	533	556	479	546	460
PROVIDENCE COUNTY.....	8,375	8,264	8,318	8,661	8,760	8,802	2,473	2,610	2,728	3,148	3,096	3,310	5,269	5,144	5,534	6,515	5,939	6,018	2,784
Charlestown.....	10	16	21	16	17	16	7	7	11	3	4	12	12	15	10	17	19	21	-5
Exeter.....	7	10	9	8	4	3	8	15	9	9	7	7	10	13	11	18	15	5	-2
Hopkinton.....	52	47	55	48	42	33	28	25	15	28	20	20	46	49	50	44	48	32	1
Narragansett.....	28	23	16	20	14	32	10	4	4	10	10	8	20	13	21	20	17	19	13
North Kingstown.....	84	74	50	68	75	66	23	26	28	26	28	39	60	63	62	72	72	52	14
South Kingstown.....	93	113	90	74	99	75	43	31	33	43	34	38	71	83	83	99	82	63	12
Richmond.....	25	17	20	25	23	19	8	8	6	4	7	7	27	30	30	28	26	27	-8
Westerly.....	168	145	170	143	175	158	76	71	63	88	78	89	125	109	93	141	115	93	65
WASHINGTON COUNTY.....	467	445	431	402	449	402	203	187	169	211	188	220	271	369	360	439	394	312	90
STATE INSTITUTIONS.....																			
WHOLE STATE.....	10,795	10,730	10,831	11,084	11,292	11,227	3,137	3,278	3,433	3,936	3,846	4,136	7,110	6,905	7,458	8,823	7,966	7,955	3,272

\* Exclusive of Deaths in State Institutions.



The varying numbers of the events of births, marriages, and deaths occurring in the different towns during each of the six years ending December 31, 1902, are very concisely presented in Table XIV, and a ready means is thereby afforded of comparing and studying the changes in the vital movements of the people in the different precincts during those years.

The actual increase of population in the State, for the ten years 1890 to 1900, was 83,048, or 24.0 per cent., or an annual average of two and four-tenths per cent. The increase by immigration must have been nearly twice as large as the natural increase.

TABLE XV.

*Births, Marriages, and Deaths in Rhode Island, in 1902, with the number and ratio of each in every 1,000 of the population of each town, and the ratio of excess of the births over the deaths in every 1,000 of the population.*

TOWNS AND DIVISIONS OF THE STATE.	Population in 1902.	Births.	Births per 1,000 of population.	Marriages.	Persons married per 1,000 of population.	Deaths.	Deaths per 1,000 of population.	Excess of Births per 1,000.
Barrington .....	1,083	25	23.1	8	14.8	29	26.8	-3.7
Bristol .....	7,352	147	20.3	49	13.5	122	16.8	3.7
Warren .....	5,260	174	33.1	37	14.1	99	18.8	14.3
BRISTOL COUNTY .....	13,595	346	25.5	94	13.8	250	18.4	7.1
Coventry .....	5,345	158	29.6	27	10.1	96	18.0	11.6
East Greenwich .....	2,720	56	20.6	23	16.9	52	19.1	1.5
West Greenwich .....	576	7	12.2	1	3.5	12	20.8	-8.6
Warwick .....	22,201	707	31.8	217	19.5	385	17.3	14.5
KENT COUNTY .....	30,842	928	30.1	268	17.4	545	17.7	12.4
Jamestown .....	1,747	12	6.9	14	16.0	23	13.2	-6.3
Little Compton .....	1,137	41	36.1	6	10.5	16	14.0	22.1
Middletown .....	1,533	26	17.0	9	11.7	16	10.4	6.6
Newport City .....	22,670	537	23.7	178	15.7	424	18.7	5.0
New Shoreham .....	1,417	17	12.0	8	11.9	20	14.1	-2.1
Portsmouth .....	2,146	43	20.0	11	10.2	33	15.4	4.6
Tiverton .....	3,017	73	24.2	18	11.9	76	25.2	-1.0
NEWPORT COUNTY .....	33,667	749	22.2	244	14.5	608	18.1	4.1
Burrillville .....	6,392	168	26.3	58	18.1	106	16.6	9.7
CENTRAL FALLS .....	18,891	545	28.8	152	16.1	287	15.2	13.6
Cranston* .....	12,091	285	23.6	82	13.6	186	15.4	8.2
Cumberland .....	8,957	214	23.9	65	14.5	151	16.9	7.0
East Providence .....	12,851	262	20.4	96	14.9	171	13.3	7.1
Foster .....	1,114	13	11.7	12	21.5	27	23.7	-12.0
Glocester .....	1,340	28	20.9	5	7.5	25	18.7	2.2
Johnston .....	3,837	98	25.5	11	5.7	58	15.1	10.4
Lincoln .....	9,037	282	31.2	75	16.6	144	15.9	15.3
North Providence .....	3,195	60	18.8	4	2.5	50	15.6	3.2
North Smithfield .....	2,258	54	23.9	13	11.5	27	11.9	12.0
PAWTUCKET .....	41,408	959	23.2	366	17.7	737	17.8	5.4
PROVIDENCE CITY .....	186,294	4,719	25.3	2,041	21.9	3,394	18.2	7.1
Scituate .....	3,346	58	17.3	15	9.0	74	22.1	-4.8
Smithfield .....	2,004	51	25.4	10	10.0	35	17.5	7.9
WOONSOCKET .....	29,488	1,006	34.1	305	20.7	546	18.5	15.6
PROVIDENCE COUNTY .....	342,503	8,802	25.7	3,310	19.3	6,018	17.6	8.1
Charlestown .....	993	16	16.1	12	24.2	21	21.1	-5.0
Exeter .....	822	3	3.6	7	17.0	5	6.1	-2.5
Hopkinton .....	2,565	33	12.9	20	15.6	32	12.5	0.4
Narragansett .....	1,554	32	20.6	8	10.3	19	12.2	8.4
North Kingstown .....	4,082	66	16.2	39	19.1	52	12.7	3.5
South Kingstown .....	5,168	75	14.5	38	14.7	63	12.2	2.3
Richmond .....	1,482	19	12.8	7	9.4	27	18.2	-5.4
Westerly .....	7,731	158	20.4	89	23.0	93	12.0	8.4
WASHINGTON COUNTY .....	24,397	402	16.5	220	18.0	312	12.8	3.7
STATE INSTITUTIONS .....	2,418	.....	.....	.....	.....	222	91.8	.....
WHOLE STATE .....	447,422	11,227	25.1	4,136	18.5	7,955	17.8	7.3

\* Not including State Institutions.

In Table XV, on the preceding page, may be found the varying proportions of the number of births, marriages, and deaths, to every 1,000 of the population in the various towns and cities in the State, as they occurred in 1902.

### BIRTHS.

#### *Proportion to Population.*

In regard to births, the extreme range of proportion to population was from 3.6 in every 1,000, in Exeter, to 36.1 in Little Compton. Following Little Compton, in the line of largest proportion, are Woonsocket, with 34.1; Warren, with 33.1; and Warwick, with 31.8. Following Exeter, in the line of smallest proportion of births to population, are Jamestown, with 6.9 in every 1,000; Foster, with 11.7; and New Shoreham, with 12.0.

The proportions of births to population, in all the counties entire, and in the cities of Central Falls, Newport, Pawtucket, Providence, Woonsocket, and the whole State, during the last seven years, are as follows:

#### BIRTHS TO EVERY 1,000 PERSONS.

	1902	1901	1900	1899	1898	1897	1896
Bristol County.....	25.5	24.6	27.5	22.7	22.0	27.1	23.0
Kent County.....	30.1	31.9	29.2	27.8	29.6	28.0	30.1
Newport County.....	22.2	23.5	24.0	24.2	22.9	22.8	24.8
Newport City.....	23.7	25.7	27.2	26.7	26.1	25.4	27.9
Providence County.....	25.7	26.2	26.5	26.4	26.8	27.9	28.3
Central Falls.....	28.8	27.8	33.6	31.0	32.2	30.2	35.2
Pawtucket.....	23.2	25.2	26.1	26.1	29.5	28.3	27.5
Providence City.....	25.3	26.0	25.6	25.9	27.6	27.2	27.8
Woonsocket.....	34.1	33.9	34.0	29.5	29.3	32.5	33.9
Washington County.....	16.5	18.5	16.6	16.8	17.5	18.5	19.6
Whole State.....	25.1	25.8	25.9	25.6	25.9	26.8	27.3

### PERSONS MARRIED.

#### *Proportion to Population.*

The proportion to the population, of persons married, can be more correctly shown in counties, or in cities and aggregates of towns, than in single towns.

The following summary will present the proportions in the manner suggested, for the last seven years:

## PERSONS MARRIED IN EVERY 1,000.

	1902	1901	1900	1899	1898	1897	1896
Bristol County.....	13.8	13.9	12.9	11.3	12.3	13.5	14.0
Kent County.....	17.4	16.9	15.7	14.0	12.4	10.7	10.2
Newport County.....	14.5	12.8	15.8	13.5	11.9	13.1	13.1
Newport City.....	15.7	14.7	18.7	14.5	13.6	14.1	14.4
Providence County.....	19.3	18.5	19.3	17.3	17.0	16.5	18.2
Central Falls.....	16.1	16.6	17.7	15.4	16.9	14.1	15.3
Pawtucket.....	17.7	18.5	21.3	17.1	14.9	16.7	20.9
Providence City.....	21.9	20.8	21.6	20.1	20.3	27.2	21.4
Woonsocket.....	20.7	19.8	20.0	18.3	16.5	32.5	16.8
Washington County.....	18.0	15.5	17.5	13.2	14.7	18.5	16.7
Whole State.....	18.5	17.6	18.4	16.2	15.8	26.8	17.0

## DEATHS.

*Proportion to Population.*

The number of deaths, in proportion to the living population, varies considerably from year to year in the different towns. The smaller the towns the greater generally is the annual variation.

The highest rate occurred in Barrington, that is, 26.8 in every 1,000 of the population; followed by Tiverton, 25.2, and Foster, 23.7.

The lowest death rate was in Exeter, that is, 6.1 in every 1,000 of the population; followed by Middletown, with 10.4, and North Smithfield, with 11.9.

The following summary will give the ratios of mortality to the population in the cities and counties of the State, during the seven years ending December 31, 1902:

## DEATHS IN EVERY OF 1,000 OF POPULATION.

	1902	1901	1900	1899	1898	1897	1896
Bristol County.....	18.4	17.9	22.6	17.6	15.0	18.6	17.9
Kent County.....	17.7	19.7	23.6	16.8	15.6	16.7	18.8
Newport County.....	18.1	16.5	18.7	17.6	15.5	16.2	17.0
Newport City.....	18.7	17.2	19.2	17.6	15.8	16.9	17.5
Central Falls.....	15.2	16.1	19.4	14.1	12.5	13.2	19.9
Pawtucket.....	17.8	16.5	20.2	14.4	15.0	17.7	18.3
Providence City.....	18.2	19.1	20.9	19.1	12.5	18.6	19.9
Woonsocket.....	18.5	16.5	19.7	18.6	16.6	17.5	20.8
Providence County.....	17.6	17.8	19.9	17.6	16.7	17.6	19.2
Washington County.....	12.8	16.2	18.2	14.1	14.5	14.7	15.3
Whole State.....	17.8	18.2	20.6	17.6	16.7	17.6	19.1

TABLE XVI.

*Proportion of Births, Marriages, and Deaths to the Population, in the Whole State, in each of the last thirty-four years.*

YEARS.	Popula- tion.	BIRTHS.		MARRIAGES.		DEATHS.		
		Number.	Of popu- lation, one birth in every	Number.	Of popu- lation, one per- son mar- ried in every	Number.	Of popu- lation, one death in every	Deaths in every 1,000 of the popu- lation.
1869.....	211,380	5,245	40.3	2,289	46.2	3,382	62.5	16.0
1870.....	218,555	5,215	41.9	2,362	46.2	3,238	67.5	14.8
1871.....	225,968	5,676	39.8	2,336	48.4	3,344	67.6	14.8
1872.....	233,637	6,143	38.0	2,537	46.0	4,247	55.0	18.2
1873.....	241,561	6,022	40.1	2,630	45.9	4,403	54.8	18.2
1874.....	249,765	6,466	38.6	2,541	49.1	4,229	50.0	16.9
1875.....	258,239	6,508	39.7	2,485	52.0	4,317	59.8	16.7
1876.....	262,513	6,329	41.5	2,253	58.3	4,116	63.8	15.7
1877.....	266,850	6,235	42.8	2,282	58.4	4,450	60.0	16.7
1878.....	271,269	6,714	40.4	2,324	58.4	4,441	61.1	16.4
1879.....	275,753	6,350	43.4	2,396	57.5	4,472	61.7	16.2
1880.....	280,319	6,295	44.5	2,769	50.6	4,829	58.0	17.2
1881.....	284,960	6,761	42.1	2,750	51.8	5,016	56.8	17.6
1882.....	289,667	6,825	42.4	2,634	55.0	5,074	57.1	17.5
1883.....	294,460	7,046	41.8	2,611	56.4	5,282	55.7	17.9
1884.....	299,329	7,305	41.0	2,558	58.5	5,141	58.2	17.2
1885.....	304,284	7,028	43.3	2,488	61.2	5,389	56.5	17.7
1886.....	311,507	7,621	40.9	2,750	56.6	5,848	53.3	18.8
1887.....	318,907	7,668	41.6	2,839	56.2	6,340	50.3	19.9
1888.....	326,477	7,840	41.6	3,022	54.0	6,591	49.5	20.2
1889.....	334,223	8,220	40.7	3,029	55.2	6,259	53.4	18.7
1890.....	342,169	8,550	40.0	3,195	53.5	6,944	49.3	20.3
1891.....	350,292	9,426	37.2	3,320	52.8	6,620	52.9	18.9
1892.....	358,608	9,270	38.7	3,502	51.2	7,396	48.5	20.6
1893.....	367,125	10,048	36.5	3,544	51.9	7,440	49.3	20.2
1894.....	375,836	9,985	37.6	3,271	57.4	7,160	52.5	19.1
1895.....	384,758	9,882	38.9	3,497	55.0	7,535	51.1	19.6
1896.....	393,891	10,750	36.6	3,327	59.2	7,504	52.5	19.1
1897.....	403,245	10,795	37.4	3,137	64.3	7,110	56.7	17.6
1898.....	414,413	10,730	38.6	3,278	65.2	6,905	60.0	16.7
1899.....	422,620	10,831	39.0	3,433	61.5	7,458	56.7	17.6
1900.....	428,556	11,084	38.7	3,936	51.4	8,823	48.6	20.6
1901.....	437,888	11,292	38.8	3,846	56.9	7,966	55.0	18.2
1902.....	447,422	11,227	39.9	4,136	54.1	7,955	56.2	17.8

During the ten years 1871-1880, the average annual birth rate was one birth to every 39.7 of the population, or 25.2 births in every 1,000; during the ten years 1881-1890, the average birth rate was one birth in every 41.0 of the population, or 24.3 in every 1,000, a falling off of a proportion of nearly one birth in every 1,000 of the population.

From 1891 to 1900 the average annual birth rate was one birth in every 37.9 of the population, or 26.2 in every 1,000.

During the period of ten years 1871-1880, the average annual death rate was one in every 58.4 of the population, or 17.2 in every 1,000, according to the returns. During the ten years 1881-1890, the average annual death rate was one in every 53.4 of the population, or 18.8 in every 1,000 of the living. From 1891 to 1900 the average annual death rate was one in every 52.9 of the population, or 19.0 in every 1,000 of the living.

It must be remembered, however, that the returns during the last ten years have been more complete than in previous years.

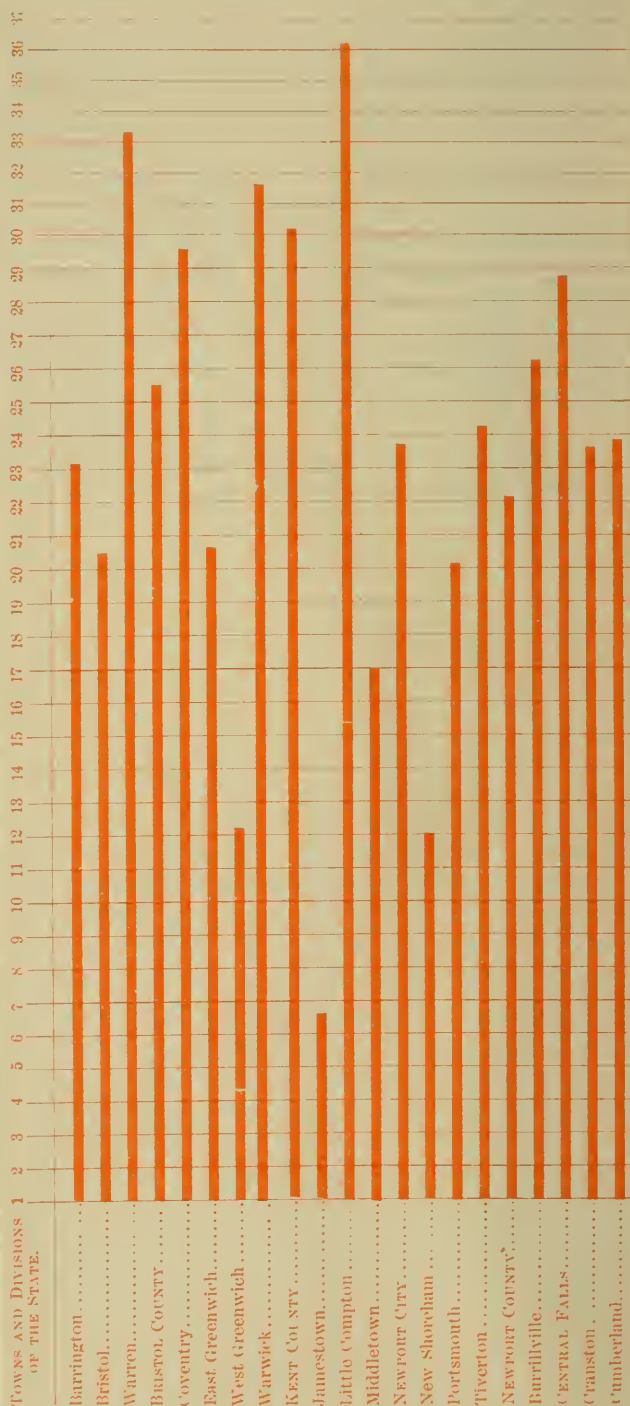




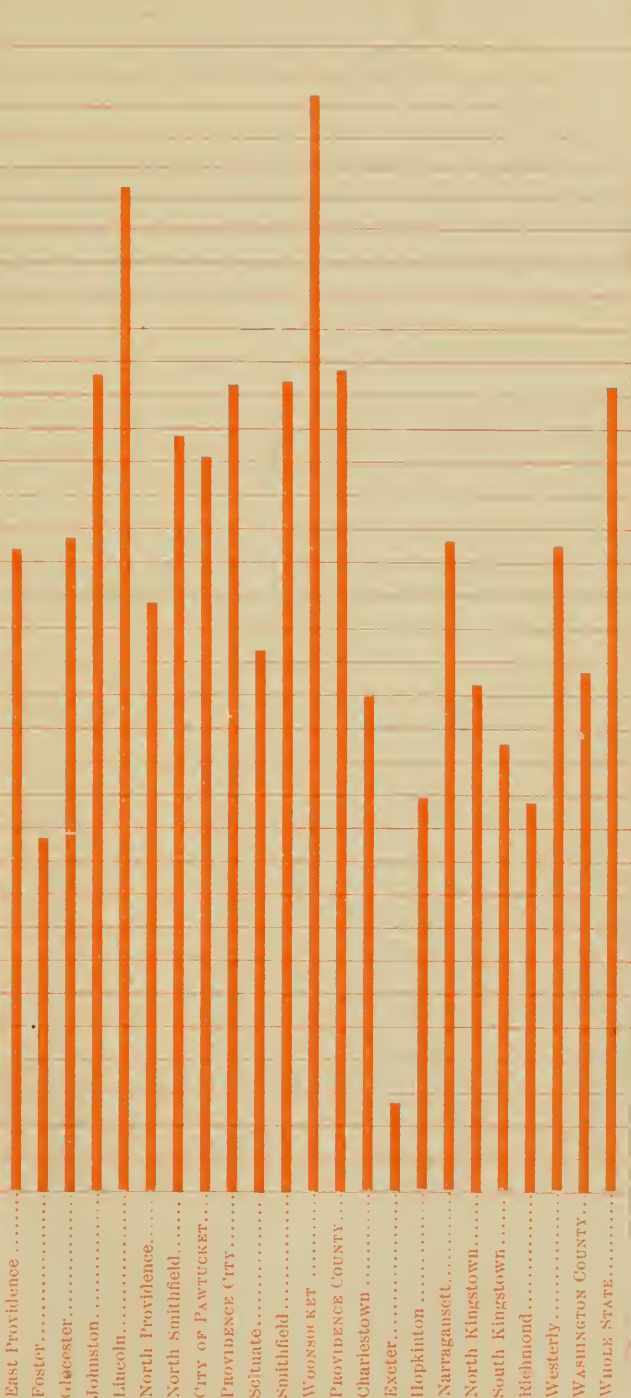
## BIRTH RATES.

Diagram I.—Showing the Number of Births in every 1,000 of the Population, in each Town and each County in the State, during the Year 1902, computed upon an estimated increase of the Population by the Census of 1900.

For explanation see foot-note on next page.



TOWNS AND DIVISIONS  
OF THE STATE.



The figures at the top of the perpendicular lines indicate, in whole numbers, the number of births during the year in every 1,000 persons. For instance, the heavy horizontal line against Barrington, at the top of this diagram, reaches across one-tenth of the space between the regular lines 29 and 34. It shows the birth rate of Barrington, in 1902, was twenty-three and one-tenth of the population.



## BIRTHS, 1902.

The general statistics of births in Rhode Island, during the year 1902, derived from the returns sent to the office of the State Registrar, may be found on pages 2 to 8, inclusive, in Tables I, II, and III.

The whole number reported is 11,227, as before stated, and is 65 less than the number in 1901.

### SEX OF THE CHILDREN.

Of the 11,227 children whose births were registered in 1902 there were 5,776 males and 5,451 females. This gives 106 males to each 100 females, or 514.5 males and 485.5 females in each 1,000 children.

The following table shows the number and sex, and the proportions of each sex, of the children born in Rhode Island, during the ten years 1854-1863, and in each of the last thirty-nine years :

TABLE XVII.

Years.	Males.	Females	Males to each	Per 1,000	
			100	Births.	
			Females.	Males.	Females.
1854-1863.....	19,386.....	18,686.....	103.6, or.....	508.8	and 491.2
1864.....	1,949.....	1,942.....	100.3, or.....	500.9	and 499.1
1865.....	2,096.....	1,857.....	112.9, or.....	530.2	and 469.8
1866.....	2,546.....	2,356.....	108.0, or.....	519.4	and 480.6
1867.....	2,665.....	2,464.....	107.0, or.....	518.7	and 481.3
1868.....	2,745.....	2,627.....	104.5, or.....	511.0	and 489.0
1869.....	2,685.....	2,560.....	104.9, or.....	511.9	and 488.1
1870.....	2,679.....	2,536.....	105.6, or.....	513.7	and 486.3
1871.....	2,878.....	2,800.....	102.8, or.....	506.9	and 493.1
1872.....	3,085.....	3,058.....	100.8, or.....	502.2	and 497.8
1873.....	3,135.....	2,887.....	108.6, or.....	520.6	and 479.4
1874.....	3,311.....	3,155.....	104.9, or.....	512.1	and 487.9
1875.....	3,362.....	3,146.....	106.9, or.....	516.6	and 483.4
1876.....	3,291.....	3,038.....	108.3, or.....	520.0	and 480.0
1877.....	3,163.....	3,072.....	103.0, or.....	507.3	and 492.7
1878.....	3,402.....	3,312.....	102.7, or.....	506.7	and 493.3
1879.....	3,259.....	3,091.....	102.4, or.....	513.2	and 486.8
1880.....	3,241.....	3,054.....	106.8, or.....	514.8	and 485.2
1881.....	3,498.....	3,263.....	107.2, or.....	517.3	and 482.7
1882.....	3,509.....	3,316.....	105.8, or.....	514.1	and 485.9
1883.....	3,548.....	3,498.....	101.4, or.....	503.5	and 496.5
1884.....	3,713.....	3,592.....	103.4, or.....	508.3	and 491.7
1885.....	3,591.....	3,437.....	104.4, or.....	510.3	and 489.7
1886.....	3,897.....	3,724.....	104.6, or.....	511.3	and 488.7
1887.....	3,968.....	3,700.....	107.2, or.....	517.5	and 482.5
1888.....	4,023.....	3,817.....	105.4, or.....	513.1	and 486.9
1889.....	4,193.....	4,027.....	104.1, or.....	510.0	and 490.0

TABLE XVII.—Concluded.

Years.	Males.	Females.	Males to each 100		Per 1,000 Births.	
			Females.		Males.	Females.
1890.....	4,351	4,199	103.5, or.....		508.8	and 491.2
1891.....	4,926	4,500	109.5, or.....		522.6	and 477.4
1892.....	4,765	4,505	105.8, or.....		514.1	and 485.9
1893.....	5,105	4,943	103.3, or.....		508.1	and 491.9
1894.....	5,129	4,856	105.6, or.....		513.7	and 486.3
1895.....	5,136	4,746	108.2, or.....		519.7	and 480.3
1896.....	5,461	5,289	103.3, or.....		508.0	and 492.0
1897.....	5,493	5,302	103.6, or.....		508.8	and 491.2
1898.....	5,443	5,287	102.9, or.....		507.3	and 492.7
1899.....	5,591	5,240	106.7, or.....		516.2	and 483.8
1900.....	5,625	5,459	103.0, or.....		507.5	and 492.5
1901.....	5,944	5,348	111.1, or.....		526.4	and 473.6
1902.....	5,776	5,451	106.0, or.....		514.5	and 485.5

The average proportion for forty-nine years is 105.0 males to every 100 females. At the end of five years from birth the number of each sex is about equal, the males having a larger mortality during that period.

#### PROPORTION OF THE SEXES. *Localities.*

In Table II, on pages 6 and 7, will be found the number of children born in the different divisions of the State during the year 1902, together with the number of each sex.

The following table will give more concisely the whole number of children born, arranged according to sex and locality, and the proportion of male children to every 100 female children :

TABLE XVIII.

BIRTHS, 1902.	Bristol County.	Kent County.	Newport County.	Providence County Towns.	Washington County.	Newport City.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Whole State.
Males.....	170	486	103	855	203	289	268	507	2,366	529	5,776
Females.....	176	442	109	718	199	248	277	452	2,353	477	5,451
Total.....	346	928	212	1,573	402	537	545	959	4,719	1,006	11,227
Males to each 100 females	96.6	110.0	94.5	119.1	102.0	116.5	96.7	112.2	100.5	110.9	106.0

Compared with the previous year, the increase in the proportion of male births in the whole State was 5.1 per cent.

The following table exhibits the proportions of births of the sexes for the past forty years in the larger divisions of the State and in the whole State :



TABLE XIX.

*Number of Males to each 100 Females.*

BIRTHS.	Bristol County.	Kent County.	Newport County.*	Providence County Towns.†	Providence City.	Washington County.	Whole State.
1863.....	120.0	98.4	97.0	101.8	111.4	108.7	105.8
1864.....	106.8	87.3	90.6	107.4	97.3	103.4	100.3
1865.....	119.3	118.2	108.8	118.8	113.8	88.1	112.9
1866.....	109.4	113.1	103.4	104.9	108.4	124.0	108.7
1867.....	115.5	98.3	117.8	106.3	104.5	120.4	107.7
1868.....	117.4	88.7	100.2	101.6	102.4	136.5	104.5
1869.....	115.7	116.7	102.7	98.0	107.5	120.6	104.9
1870.....	126.4	111.6	100.0	105.1	104.9	99.5	105.6
1871.....	131.8	97.9	132.5	100.8	95.2	113.3	102.8
1872.....	109.2	93.8	109.1	103.5	95.7	110.6	100.9
1873.....	129.2	113.0	117.9	104.5	109.0	104.7	108.6
1874.....	98.7	111.9	101.3	110.4	102.9	94.0	104.9
1875.....	95.2	103.1	97.7	104.3	109.1	134.3	106.9
1876.....	142.1	104.4	108.5	108.0	106.8	103.7	108.3
1877.....	138.7	102.4	98.5	100.3	104.9	95.3	103.0
1878.....	120.5	120.6	94.8	101.5	106.8	78.8	102.7
1879.....	124.3	95.5	103.6	105.4	105.7	106.3	105.4
1880.....	117.2	110.5	113.5	102.4	107.6	95.4	106.1
1881.....	91.2	111.3	102.0	105.9	109.0	115.7	107.2
1882.....	94.7	110.2	112.5	103.1	106.5	105.7	105.8
1883.....	94.0	97.6	97.0	103.5	102.2	102.2	101.4
1884.....	105.0	111.7	92.9	102.5	105.8	99.0	103.4
1885.....	132.2	107.3	98.0	104.8	103.6	104.3	104.4
1886.....	120.0	81.7	102.6	106.7	105.0	121.7	104.6
1887.....	115.1	121.7	106.6	103.9	107.9	106.7	107.2
1888.....	98.1	105.1	105.0	103.4	107.4	110.2	105.4
1889.....	81.9	122.0	107.5	103.6	101.4	110.2	104.1
1890.....	96.5	113.0	106.8	108.5	98.3	97.4	103.6
1891.....	107.1	110.4	118.4	107.0	109.1	106.4	109.5
1892.....	120.0	102.1	102.4	110.7	100.0	98.5	105.8
1893.....	90.7	101.8	97.7	104.1	104.1	109.0	105.8
1894.....	103.4	102.4	121.1	110.0	99.6	106.5	105.6
1895.....	118.4	116.3	100.8	105.0	109.6	115.6	108.2
1896.....	96.5	95.4	103.7	102.4	105.8	108.5	103.3
1897.....	101.2	108.4	97.5	103.9	104.4	96.2	103.6
1898.....	96.2	104.4	98.9	101.6	105.2	102.3	102.9
1899.....	121.9	103.2	114.0	106.8	102.9	129.2	106.7
1900.....	114.9	100.9	113.0	99.3	104.5	102.0	103.0
1901.....	132.4	116.7	117.8	111.0	112.2	96.1	111.1
1902.....	96.6	110.0	109.8	112.2	100.5	102.0	106.0

\* Including city of Newport. † Including cities of Central Falls, Pawtucket, and Woonsocket.

There will be found in the following summary, in the aggregate, the average number of males to each 100 females, born during the forty years from 1863-1902, in the different divisions of the State :

Bristol County.....	111.6 males to each 100 females.
Kent County.....	108.6 males to each 100 females.
Newport County*.....	108.3 males to each 100 females.
Providence County Towns†.....	107.8 males to each 100 females.
Providence City .....	107.6 males to each 100 females.
Washington County.....	109.8 males to each 100 females.
Whole State.....	108.1 males to each 100 females.

### BIRTHS AND SEASON.

Table II, on pages 6 and 7 of this report, gives the number of births occurring in the different months of the year, in the several divisions of the State.

According to this table, the greatest number of births in any one month, in 1902, occurred in August, and the largest in any quarter in the third.

The following table shows the total number of children born in the State of Rhode Island, according to the returns, in each quarter of each of the last six years; and also the aggregate number and the percentage of the aggregate of each quarter in forty-nine years, from 1854 to 1902, inclusive :

TABLE XX.

QUARTERS.	1902.	1901.	1900.	1899.	1898.	1897.	1854-1902, inclusive.	
							Number.	Per cent.
January—March .....	2,758	2,751	2,736	2,693	2,686	2,749	79,782	23.84
April—June .....	2,628	2,612	2,581	2,549	2,562	2,386	78,974	23.60
July—September.....	2,937	3,010	2,921	2,791	2,862	2,983	87,702	26.20
October—December.....	2,904	2,919	2,846	2,798	2,680	2,677	88,216	26.36
Whole Year .....	11,227	11,292	11,084	10,831	10,730	10,795	334,674	100.00

Table XX presents results showing that, according to the registration of forty-nine years, the average proportions of births to

\* Including city of Newport. † Including cities of Central Falls, Pawtucket, and Woonsocket.

the whole number of births in the different quarters of the year were as follows :

January—March.....	238.4 in every 1,000 births.
April—June.....	236.0 in every 1,000 births.
July—September.....	262.0 in every 1,000 births.
October—December.....	263.6 in every 1,000 births.

The proportions of births in Rhode Island, in the different quarters of the year, to the whole number of births in 1902, were as follows :

1. January—March.....	24.5 per cent., or.....	245 in every 1,000
2. April—June.....	23.4 per cent., or.....	234 in every 1,000
3. July—September.....	26.2 per cent., or.....	262 in every 1,000
4. October—December.....	25.9 per cent., or.....	259 in every 1,000
First six months.....	479 births in every 1,000 of whole number.	
Second six months.....	521 births in every 1,000 of whole number.	

### BIRTHS. *Sex and Season.*

In Table II, on pages 6 and 7, will also be found the number of births of *each sex* by months, as they occurred in the different divisions of the State, during the year 1902. From it we ascertain the number of *each of the sexes* born during each quarter of the year, with their relative proportions, and also the aggregates and proportions of the same for the whole State.

The following table will present a summary of the quarterly periods, number of births, and proportions of the sexes, for the same year :

	Males.	Females.	Males to each	Per 1,000	
			100	each quarter.	
			Females.	Males.	Females.
1. January—March.....	1,408	1,350	104.3	511	489
2. April—June... ..	1,372	1,256	109.2	522	478
3. July—September.....	1,491	1,446	103.1	508	492
4. October—December.....	1,505	1,399	107.6	518	482
<hr/>					
Whole Year.....	5,776	5,451	106.0	514	486

The following table shows the number of male children born to every 100 female children, in each quarter of the last three years; and also the proportion of births of male children to each 100 female children born during seven periods of five years each, from 1866 to 1900 inclusive :

TABLE XXI.

YEARS.	1902.	1901.	1900.	5 years, 1896 to 1900.	5 years, 1891 to 1895.	5 years, 1886 to 1890.	5 years, 1881 to 1885.	5 years, 1876 to 1880.	5 years, 1871 to 1875.	5 years, 1866 to 1870.
First Quarter .....	104.3	111.4	107.4	103.8	104.6	104.3	105.8	106.0	101.5	106.6
Second Quarter .....	109.2	110.5	105.0	105.1	107.3	105.4	104.8	102.7	104.7	107.3
Third Quarter .....	103.1	110.3	97.9	102.8	108.6	104.6	105.1	107.1	104.8	106.0
Fourth Quarter .....	107.6	112.3	102.6	104.2	105.8	106.5	102.5	108.2	106.5	104.8
Total Average .....	106.0	111.1	103.0	103.9	106.5	105.2	104.5	106.2	104.2	106.2

The above table shows the variation of the proportions of the sexes in the different quarters in the different years, and seems to conclusively determine that season has very little, if any, influence in the causation of sex.

## PARENTAGE.

By reference to Table I, page 4, in the division of births, there will be found the parentage of the children born in Rhode Island during the year 1902. It will be seen that of the whole number, 11,227, there were 3,414 of native, 5,555 foreign, and 2,258 of mixed parentage.

By mixed parentage is meant the children born of native fathers and foreign mothers, and of foreign fathers and native mothers.

Of native fathers and foreign mothers there were 1,111, and of foreign fathers and native mothers, 1,147.

The following table will show the number and parentage of the children born in the State and the variations of the same from year to year, in each of the last three years; and also the number and variations occurring in three periods of five years each and three of ten years each, from 1858 to 1902, inclusive:

TABLE XXII.

PARENTAGE.	1902.	1901.	1900.	5 years, 1898 to 1902.	5 years, 1893 to 1897.	5 years, 1888 to 1892.	10 years, 1878 to 1887.	10 years, 1868 to 1877.	10 years, 1858 to 1867.
Native father and mother.....	3,414	3,426	3,388	16,931	16,762	16,511	29,170	23,645	20,321
Foreign father and mother ...	5,555	5,629	5,499	27,485	25,084	18,737	28,807	26,356	19,665
Native father, foreign mother.	1,111	1,063	1,078	5,297	4,819	4,021	5,371	3,135	1,690
Foreign father, native mother.	1,147	1,174	1,119	5,451	4,795	4,039	6,265	4,077	1,696
Parentage not stated. ....	.....	.....	.....	.....	.....	.....	.....	.....	293
Total....	11,227	11,292	11,084	55,164	51,460	43,306	69,613	59,213	43,665

The following table of *percentages* will show, in a different and perhaps clearer way, the same changes that have occurred in the proportions of the births in the different classes of parentage during the last three years, and during forty-five years, from 1858 to 1902, inclusive, in three periods of five years each, and three of ten years :

TABLE XXIII.

PARENTAGE.	1902.	1901	1900.	5 years, 1898 to 1903.	5 years, 1893 to 1897.	5 years, 1888 to 1892.	10 years, 1878 to 1887.	10 years, 1868 to 1877.	10 years, 1858 to 1867.
Native father and mother.....	30.41	30.34	30.56	30.68	32.60	33.25	41.97	43.36	46.84
Foreign father and mother ....	49.48	49.85	49.61	49.83	48.73	43.14	41.40	44.53	45.36
Native father, foreign mother.	9.89	9.41	9.73	9.60	9.36	9.30	7.63	5.37	3.89
Foreign father, native mother.	10.22	10.40	10.10	9.87	9.31	9.31	9.00	6.74	3.91
Total .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

The registration of births, in 1902, is of interest as continuing to show, as usual, a smaller proportion of children born of native fathers than of foreign fathers. A considerable number of those recorded as native fathers were themselves children of foreign parents.

The percentage of children of mixed parentage was about the same, in 1902, as in the previous year.

The following table will present the percentages of children of native and of foreign-born fathers, and of native and foreign-born mothers, respectively, in each of the last three years, and in each of three periods of five years each and three of ten years each, from 1858 to 1902, inclusive :

TABLE XXIV.

CHILDREN WITH	1902.	1901.	1900.	5 years, 1898 to 1902.	5 years, 1893 to 1897.	5 years, 1888 to 1892.	10 years, 1878 to 1887.	10 years, 1868 to 1877.	10 years, 1858 to 1867.
Native fathers.. .....	40.20	39.75	40.29	40.30	41.96	47.56	49.65	48.73	50.73
Foreign fathers.....	59.70	60.25	59.71	59.70	58.04	52.44	50.35	51.27	49.26
Native mothers .....	40.63	40.74	40.66	40.57	41.91	47.57	50.85	50.10	50.75
Foreign mothers.. .....	59.37	59.26	59.34	59.43	58.09	52.43	49.15	49.90	49.25



The number of native fathers of children born, in 1902, was 2,177 less than the number of foreign fathers, and the number of native mothers was 2,105 less than of foreign.

### BIRTHS OF COLORED CHILDREN.

The number of births of children of colored parentage reported for the year 1902 is 211. This number is 41 less than in 1901, and also 20 less than in 1900.

In regard to sex, the numbers and proportions were as follows, viz.: males, 108; females, 103; or 104.9 males to each 100 females.

As the number of colored persons in the State was, according to the census of 1900, 9,125,\* the ratio of births in this class would be 23.1 per thousand, or 1 to each 43.2 colored inhabitants.

The following summary will show the changes that have occurred from year to year, in the proportions of the sexes of colored children born in Rhode Island, during the last twenty-seven years:

Years.	Whole Number.	Males.	Females.	Males to each 100 Females.
1876-1885.....	1,762.....	849.....	913.....	93.0
1886.....	212.....	117.....	95.....	123.0
1887.....	211.....	111.....	100.....	111.0
1888.....	202.....	109.....	93.....	117.2
1889.....	194.....	87.....	107.....	81.3
1890.....	183.....	89.....	94.....	94.6
1891.....	173.....	86.....	87.....	98.9
1892.....	182.....	94.....	88.....	106.8
1893.....	203.....	91.....	112.....	81.3
1894.....	221.....	113.....	108.....	104.6
1895.....	221.....	117.....	104.....	112.5
1896.....	226.....	104.....	122.....	85.2
1897.....	206.....	100.....	106.....	94.3
1898.....	216.....	105.....	111.....	94.6
1899.....	201.....	105.....	96.....	109.4
1900.....	231.....	120.....	111.....	108.1
1901.....	252.....	125.....	127.....	98.4
1902.....	211.....	108.....	103.....	104.9

The following table will show the location, number, sex, etc., of colored births during 1902:

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\* This does not include Chinese or Japanese.



TABLE XXV.

*Showing Number, Sex, etc., of Colored Births, 1902.*

TOWNS AND CITIES.	Whole Number.	Males.	Females.	COUNTIES.
Bristol.....	1	1	.....	Bristol County..... 1
Coventry.....	1	.....	1	
East Greenwich.....	4	2	2	
Warwick.....	4	1	3	Kent County..... 9
Little Compton.....	1	1	.....	
NEWPORT CITY.....	40	22	18	
Portsmouth.....	2	.....	2	Newport County..... 43
CENTRAL FALLS.....	2	.....	2	
Cranston.....	1	1	.....	
East Providence.....	5	3	2	
Lincoln.....	2	.....	2	
PAWTUCKET.....	4	3	1	
PROVIDENCE CITY.....	123	64	59	Providence County... 137
Charlestown.....	3	.....	3	
Hopkinton.....	1	1	.....	
Narragansett.....	2	1	1	
North Kingstown.....	4	1	3	
South Kingstown.....	6	3	3	
Richmond.....	2	2	.....	
Westerly.....	3	2	1	Washington County.. 21
WHOLE STATE.....	211	108	103	..... 211

## NUMBER OF CHILD OF THE MOTHER.

In the following table will be found the number of the child of the mother born during 1902; that is, how many of the children born were reported as the first, second, or third child, etc., of their respective mothers. The statistics on this subject begin with the year 1857, and the following table includes the children reported during the last six years, and also the total for forty-six years, 1857 to 1902, inclusive:

TABLE XXVI.

NUMBER OF THE CHILD OF THE MOTHER.	1897.	1898.	1899.	1900.	1901.	1902.	46 years, 1857-1902.
First .....	2,438	2,393	2,426	2,640	2,851	2,819	78,607
Second .....	2,098	2,059	2,089	1,977	2,179	2,103	63,628
Third .....	1,687	1,631	1,635	1,616	1,589	1,503	49,209
Fourth .....	1,291	1,310	1,286	1,342	1,265	1,291	37,534
Fifth .....	927	982	942	978	972	1,010	28,054
Sixth .....	712	715	753	771	724	729	20,682
Seventh .....	499	532	544	531	528	553	14,867
Eighth .....	342	378	382	378	392	383	10,573
Ninth .....	260	231	238	289	247	274	7,178
Tenth .....	180	180	176	199	179	171	4,900
Eleventh .....	132	105	130	125	128	124	3,106
Twelfth .....	89	80	86	82	79	83	2,008
Thirteenth .....	50	54	58	63	53	56	1,205
Fourteenth .....	37	33	39	34	35	44	669
Fifteenth .....	14	10	12	24	16	22	346
Sixteenth .....	6	5	7	7	10	9	175
Seventeenth .....	4	8	4	2	4	2	92
Eighteenth .....				1	3	3	42
Nineteenth .....	2	3	1	1		3	29
Twentieth .....			1	1	1		11
Twenty-first .....			1		2	2	9
Twenty-second .....			1	1			4
Unstated .....	27	21	20	22	35	43	454
Total .....	10,795	10,730	10,831	11,084	11,292	11,227	323,382

There was a decrease of 65 in the whole number of births in 1902 from the number in 1901.

There are varying differences in the proportions of all classes in the different years.

There were two returns of births in the twenty-first class.

The proportion of each class to the whole number will be shown by the following table, which gives the percentage of the children born in each of the last four years who were respectively the first, second, third, etc., children of the mothers; and which will also give the average percentage of each class of births in each of the last four years, and also in two periods of ten years, and three

periods of five years, comprising the thirty-five years from 1868 to 1902, inclusive :

NUMBER OF THE CHILD.	1902.	1901.	1900.	1899.	5 years, 1898 to 1902.	5 years, 1893 to 1897.	5 years, 1888 to 1892.	10 years, 1878 to 1887.	10 years, 1868 to 1877.
First.....	25.12	25.25	23.82	22.40	23.78	23.78	25.20	23.7	25.2
Second.....	18.73	19.30	17.74	19.29	18.8	19.90	19.77	19.1	20.7
Third.....	13.38	14.07	14.58	15.09	14.46	15.29	14.94	15.5	15.5
Fourth.....	11.50	11.20	12.11	11.87	11.77	11.45	11.10	11.7	11.4
Fifth.....	8.99	8.61	8.82	8.70	8.85	8.52	8.23	8.8	8.4
First to Fifth ...	77.72	78.43	77.17	77.35	77.71	78.94	79.24	78.8	81.1
Sixth and over, and unstated...	22.28	21.57	22.83	22.65	23.29	21.06	20.76	2.12	18.9
Total.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0	100.0

TABLE XXVII.

*Showing the Ages of the Fathers and Mothers of Children born in 1902.*

AGES OF FATHERS.	AGES OF MOTHERS.													No. of Fathers.
	15 years.	16 years.	17 years.	18 years.	19 years.	20-25 years.	25-30 years.	30-35 years.	35-40 years.	40-45 years.	45-50 years.	50-55 years.	Unstated age.	
17 years.....	1	1												2
18 years.....	1		7	3		4								15
19 years.....	1	1	8	8	10	6								34
20-25 years .....	2	9	27	77	103	812	143	23	2					1,198
25-30 years.....		4	14	27	88	1,054	1,369	225	33	1				2,815
30-35 years .....		3	4	13	11	382	1,188	1,197	190	19				3,007
35-40 years.....			1	2	3	103	388	799	783	70	4			2,153
40-45 years.....					1	22	102	300	501	282	7	1		1,216
45-50 years .....					1	12	24	65	154	148	22	1		427
50-55 years.....				1		3	8	23	39	41	15	1		131
55-60 years.....	1				1	1	4	9	6	15	4			41
60-65 years.....							2	3	4	4	1			14
65-70 years .....							2	1						3
70-75 years.....								1						1
Unstated age.....	2	6	8	12	17	48	28	8	3	2			36	170
Number of Mothers...	6	25	63	147	238	2,447	3,258	2,654	1,715	582	53	3	86	11,227

The nativity of the mothers under 19 years of age was as follows:

Of the six at 15 years, 4 were American, 1 French-Canadian, and 1 Portuguese.

Of the twenty-five at 16 years, 23 were American, 1 was French-Canadian, and 1 Nova Scotian.

Of the sixty-three at 17 years, 49 were American, 9 French-Canadian, 1 Italian, 1 Polish, 2 Portuguese, and 1 Syrian.

Of the one hundred and forty-seven at 18 years, 133 were American, 1 Austrian, 1 British American, 1 English, 5 French-Canadian, 5 Italian, and 1 Portuguese.

The 11,227 children were divided as follows, to mothers of different age periods:

	Number of Mothers.	Per cent.
Under twenty years.....	479.....	4.27
Twenty, and under twenty-five. ....	2,447.....	21.79
Twenty-five, and under thirty.....	3,258.....	29.02
Thirty, and under thirty-five .....	2,654.....	23.64
Thirty-five, and under forty .....	1,715.....	15.28
Forty, and under forty-five.....	582.....	5.18
Forty-five and over .....	56.....	.50
Unstated age.....	36.....	.32
Total.....	11,227.....	100.00

### PLURALITY BIRTHS.

The general statistics in relation to plural births, in Rhode Island, may be found on page 8, Table III.

There were one hundred and forty-one cases during the year, of which one hundred and forty were twins and one was triplets, thus making the number of two hundred and eighty-three children.

Of the 283 children of plural birth, 142 were males and 141 were females.

The cases occurred in the different divisions of the State as follows:

Bristol county, 4; Kent county, 16; Newport county, 0; Newport city, 13; Providence county towns\*, 50; Providence city, 55; Washington county, 3.

The following exhibit will show the parentage of children of plural birth in Rhode Island, in 1902, and number of each:

\* Including Central Falls, Pawtucket, and Woonsocket.

Parents both native Americans.....	44
Parents both born in Austria.....	1
"    "    "    England.....	1
"    "    "    Canada (French).....	14
"    "    "    Germany.....	2
"    "    "    Ireland.....	14
"    "    "    Italy.....	16
"    "    "    Poland.....	2
"    "    "    Portugal.....	4
"    "    "    Roumania.....	1
"    "    "    Russia.....	2
"    "    "    Sweden.....	5
American father and British American mother.....	3
American father and English mother.....	2
American father and Finnish mother.....	1
American father and French-Canadian mother.....	5
American father and German mother.....	1
American father and Irish mother.....	4
American father and Russian mother.....	1
English father and Irish mother.....	1
French-Canadian father and American mother.....	7
Irish father and American mother.....	5
Irish father and English mother.....	2
Irish father and French-Canadian mother.....	1
Scotch father and English mother.....	1
Swedish father and American mother.....	1

The months in which the plurality births occurred were as follows:

January. ....17	April..... 5	July .....14	October .....13
February..... 9	May .....14	August .....13	November.....15
March..... 6	June .....12	September.....12	December .....11
—	—	—	—
First Quarter.....32	Second Quarter...31	Third Quarter....39	Fourth Quarter...39
First half of year ..... 63		Second half of year..... 78	
Total..... 141			
Total children..... 283			

The general statistics of births, and number of *cases* reported in Rhode Island, during a period of forty-nine years, that is, from 1854 to 1902, inclusive, are as follows:

330,817 cases of single births.....	giving	330,817 children.
3,533 cases of twin births....	giving	7,066 children.
36 cases of triple births.....	giving	108 children.
1 case of quadruple births.....	giving	4 children.

Of the whole number of *cases* of child-birth (334,387) during the forty-nine years, one in 95 produced twins, one in 9,289 produced triplets, and one in 334,387 produced quadruplets.

Of the whole number of children born during the same period (337,995), ascertained from the reports, one in every 48 was a twin; one in every 3,130 was a triplet.

Of the 3,570 *cases* of plurality births which have occurred in the State during the last forty-nine years, there were 1,294 cases in which both parents were natives; 1,749 cases in which both parents were foreign; 518 cases in which the parents were mixed, that is, one native and one foreign parent; and 9 in which the parentage was not stated.

The whole number of children born in plurality cases, during the forty-nine years, was 7,178, of whom 3,623 were males, and 3,551 were females; the sex of the remaining four was not given.

#### STILL-BORN.

The whole number of still-born children reported in Rhode Island, for the year 1902, was 462; this number is 7 less than for the year 1901.

The following are the numbers reported from the different divisions of the State:

Bristol County.....	12
Kent County.....	45
Newport County Towns.....	7
Newport City.....	30
Providence County Towns.....	58
Central Falls.....	23
Pawtucket.....	26
Providence City.....	216
Woonsocket.....	30
Washington County.....	15
Whole State.....	462

The following table will give the number in each town from which still-births were reported, with the sex, parentage, and color:



TABLE XXVIII.

*Still-Born, 1902; Locality, Number, Sex, Parentage, and Color.*

TOWNS AND DIVISIONS OF THE STATE.	Total.	SEX.		PARENTAGE.		COLOR.	
		Males.	Females.	Native.	Foreign.	White.	Colored.
Bristol .....	6	5	1	2	4	6	.....
Warren.....	6	2	4	2	4	6	.....
BRISTOL COUNTY.....	12	7	5	4	8	12	.....
Coventry.....	5	2	3	2	3	5	.....
East Greenwich.....	5	3	2	5	.....	5	.....
Warwick .....	35	29	6	10	25	34	1
KENT COUNTY.....	45	34	11	17	28	44	1
Jamestown.....	2	.....	2	2	.....	2	.....
New Shoreham .....	2	2	.....	2	.....	2	.....
NEWPORT CITY.....	30	14	16	15	15	28	2
Portsmouth .....	2	1	1	1	1	2	.....
Tiverton .....	1	.....	1	.....	1	1	.....
NEWPORT COUNTY.....	37	17	20	20	17	35	2
Burrillville .....	9	4	5	4	5	9	.....
CENTRAL FALLS .....	23	14	9	2	21	23	.....
Cranston.....	19	9	10	9	10	19	.....
Cumberland.....	5	3	2	2	3	5	.....
East Providence.....	5	4	1	4	1	5	.....
Foster.....	2	2	.....	2	.....	2	.....
Gloicester.....	2	1	1	2	.....	2	.....
Johnston.....	1	1	.....	1	.....	1	.....
Lincoln.....	9	5	4	4	5	9	.....
North Providence.....	3	1	2	2	1	3	.....
PAWTUCKET.....	26	18	8	11	15	25	1
PROVIDENCE CITY.....	216	117	99	85	131	208	8
Scituate.....	3	3	.....	2	1	3	.....
WOONSOCKET.....	30	21	9	9	21	30	.....
PROVIDENCE COUNTY.....	353	203	150	139	214	344	9
Narragansett.....	2	1	1	2	.....	.....	2
North Kingstown .....	6	2	4	6	.....	6	.....
South Kingstown.....	1	.....	1	1	.....	1	.....
Richmond.....	1	1	.....	1	.....	1	.....
Westerly.....	5	2	3	1	4	4	1
WASHINGTON COUNTY.....	15	6	9	11	4	12	3
WHOLE STATE.....	462	267	195	191	271	447	15

## SUMMARY OF SEX OF STILL-BORN.

The following table shows the number and sex of the still-born children whose births were reported in Rhode Island during each of the last five years, and also of a period of forty-nine years, extending from January 1, 1854, to December 31, 1902 :

TABLE XXIX.

SEX.	1902.	1901.	1900.	1899.	1898.	Jan. 1, 1854, to Dec. 31, 1902.
Males.....	267	251	221	210	240	7,419
Females.....	195	218	153	179	173	5,336
Total.....	462	469	374	389	413	12,755

The average proportions of the sexes of the still-born, for the period of forty-nine years, were as follows: In every 100 still-births there were about 58 males and 42 females.

*Season of Still-Births.*—During 1902 the proportions in relation to season, by percentage, were as follows :

First Quarter.....	25.54	Third Quarter.....	25.76
Second Quarter.....	23.81	Fourth Quarter.....	24.89
First half of the year.....	49.35	Last half of the year.....	50.65

The births of the still-born in the different months of the year, although somewhat variable in number, do not, as a rule, show great discrepancies.

## PARENTAGE OF THE STILL-BORN.

Of the 462 still-born children reported in 1902 there were 191 of native and 271 of foreign parentage, reckoned by the nativity of the fathers, that is, the father's name given ; and 195 of native and 267 of foreign, reckoned by the nativity of the mothers, name of father given or not given.

## ILLEGITIMATES.

In the following table will be found the whole number of illegitimate births returned during 1902, with the sex, color, parentage, and locality of birth:

TABLE XXX.

*Illegitimates, 1902.*

TOWNS.	Whole Number.	SEX.		COLOR.		PARENTAGE.	
		Males.	Females.	White.	Black.	Native.	Foreign.
Bristol.....	6	4	2	5	1	4	2
Warren.....	1		1	1			1
East Greenwich.....	1	1		1			1
Warwick.....	4	2	2	4		1	3
Little Compton.....	1	1		1		1	
NEWPORT CITY.....	6	4	2	2	4	5	1
Tiverton.....	1		1	1		1	
Burrillville.....	1	1		1		1	
CENTRAL FALLS.....	4	1	3	4			4
Cranston.....	7	4	3	7		3	4
Cumberland.....	1		1	1		1	
East Providence.....	1	1		1			1
Johnston.....	2		2	2		1	1
PAWTUCKET.....	4	2	2	4			4
PROVIDENCE CITY.....	80	44	36	64	16	49	31
Scituate.....	1	1		1		1	
WOONSOCKET.....	11	7	4	11		3	8
Charlestown.....	2		2	1	1	2	
Hopkinton.....	1	1		1			1
Narragansett.....	1		1		1	1	
North Kingstown.....	2		2	1	1	1	1
South Kingstown.....	1	1			1	1	
Richmond.....	2		2	2			2
Westerly.....	2	1	1	1	1	2	
WHOLE STATE.....	143	76	67	117	26	78	65

There were returns, during 1902, of 143 children of illegitimate parentage. The number is 2 more than that of the previous year.

*Sex.*—Of the 143, there were 76 males and 67 females.

*Color.*—Of the 143 illegitimates born during 1902, 117, or 81.8 per cent., were white ; and 26, or 18.2 per cent., were colored.

*Parentage.*—Of the 143, 78, or 54.5 per cent. of all, were born of native mothers ; and 65, or 45.5 per cent., of foreign born mothers. The colored illegitimates were all of native parentage. There were of the 117 white illegitimates, 52 born of native mothers, and 65 of foreign mothers.

The ages of the mothers were as follows :

Age.	No. of Mothers.	Age.	No. of Mothers.
15.....	1	29.....	1
16.....	5	30.....	3
17.....	5	31.....	1
18.....	14	32.....	1
19.....	20	33.....	2
20.....	11	34.....	1
21.....	14	35.....	1
22.....	14	39.....	1
23.....	12	40.....	1
24.....	5	44.....	1
25.....	9	Unstated.....	4
26.....	6		—
27.....	4	Total.....	143
28.....	6		

Forty-four of the illegitimates were born of indigent, pauper, or criminal mothers, in public, charitable, or penal institutions.

Thirty-eight of these forty-four births occurred at the Lying-in-Hospital, in the city of Providence.

The proportion of illegitimates to the whole number of births was about one in every 79 cases, or about 13 in every 1,000.

## MARRIAGES, 1902.

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The number of marriages registered in Rhode Island, during the year 1902, was 4,136. This number is 290 more than in 1901, and 200 more than in 1900.

The general statistics of marriage, in 1902, in relation to season and number, in the different divisions of the State, may be found in Table IV, on the ninth page.

The statistics in relation to the proportion to population of persons married in 1902, in each of the towns and general divisions of the State, may be found in Tables XV and XVI, on pages 114 and 117.

The following table will present the number of marriages, and the ratio of marriage to population, in each year for a period of forty-three years, 1860 to 1902, inclusive :

TABLE XXXI.

YEARS.	Number Marriages.	Of Population, one Person Married in every	Persons Married per 1,000 of Population.	YEARS.	Number Marriages.	Of Population, one Person Married in every	Persons Married per 1,000 of Population.
1860.....	1,748	50.0	20.0	1883.....	2,611	54.4	18.3
1861.....	1,533	56.8	17.6	1884.....	2,558	58.1	17.2
1862.....	1,450	61.1	15.1	1885.....	2,488	61.3	16.3
1863.....	1,618	54.7	18.3	1886.....	2,750	56.5	17.7
1864.....	1,844	50.1	19.9	1887.....	2,839	55.8	18.0
1865.....	1,896	48.7	20.5	1888.....	3,022	53.5	18.7
1866.....	2,318	39.9	25.1	1889.....	3,029	57.8	17.3
1867.....	2,344	39.8	25.1	1890.....	3,195	54.1	18.4
1868.....	2,285	40.5	24.8	1891.....	3,320	53.5	18.5
1869.....	2,289	47.5	21.1	1892.....	3,502	52.4	19.1
1870.....	2,362	46.0	21.7	1893.....	3,544	53.6	18.7
1871.....	2,336	46.5	21.5	1894.....	3,271	57.4	17.4
1872.....	2,537	42.9	23.2	1895.....	3,497	55.0	18.2
1873.....	2,630	41.3	24.2	1896.....	3,327	59.2	17.0
1874.....	2,541	50.8	19.6	1897.....	3,137	64.3	15.6
1875.....	2,485	52.0	19.2	1898.....	3,278	63.2	15.8
1876.....	2,253	57.3	17.5	1899.....	3,433	61.6	16.2
1877.....	2,282	56.6	17.7	1900.....	3,936	54.4	18.4
1878.....	2,324	55.7	17.9	1901.....	3,846	56.9	17.6
1879.....	2,396	57.8	17.5	1902.....	4,136	54.1	18.5
1880.....	2,769	49.9	20.0	Annual average..			
1881.....	2,750	50.3	19.9			53.1	19.1
1882.....	2,634	52.5	19.0				

## SEASON.

The following table will show the number and percentage of marriages in Rhode Island, in each month and each quarter of the year 1902, together with the aggregate number and percentage in each quarter for forty-nine years, viz., from 1854 to 1902, inclusive :



TABLE XXXII.

MONTHS.	Number of marriages, each month, 1902.	Number of Mar- riages each Quar- ter, 1902.	Percentage of each Quarter to total Marriages, 1902.	Number of Mar- riages per Quarter, 49 yrs., 1854-1902.	Percentage each Quar- ter, 49 years.
January.....	326 }	1st Quarter... 770	18.62	1st Quarter.. 26,434	21.16
February.....	266 }				
March.....	178 }				
April.....	434 }	2d Quarter... 1,198	28.97	2d Quarter.. 32,727	26.20
May.....	274 }				
June.....	490 }				
July.....	303 }	3d Quarter... 1,003	24.25	3d Quarter.. 20,285	23.44
August.....	297 }				
September.....	403 }				
October.....	446 }	4th Quarter... 1,165	28.16	4th Quarter.. 36,470	29.20
November.....	506 }				
December.....	213 }				
Total.....		4,136	100.00	*124,936	100.00

The largest number of marriages in any one month, during 1902, occurred in the month of November. For thirty-eight years previous to 1892 the greatest number of marriages was in the month of November. Since then, with the exception of in 1895, 1899, and 1902, the greatest number of marriages has been in the month of June.

During 1902 the proportions in the different quarters, from the largest to the smallest, were as follows : second quarter, 28.97 per cent.; fourth quarter, 28.16 per cent.; third quarter, 24.25 per cent.; first quarter, 18.62 per cent.

#### NATIVITY OF PERSONS MARRIED.

The following table shows the *number* of marriages, according to the nativities of the parties, for each of the last three years, and also for the aggregate of twenty-five years, from 1858 to 1882, inclusive ; also for four periods of five years each, from 1883 to 1902.

\* Including 20, date not given, recorded previous to 1860.

TABLE XXXIII.

BIRTH-PLACE.	1902.	1901.	1900.	5 years, 1898 to 1902. Total.	5 years, 1893 to 1897. Total.	5 years, 1888 to 1892. Total.	5 years, 1883 to 1887. Total.	25 years, 1858 to 1882. Total.
United States.....	1,845	1,769	1,800	8,594	7,846	7,813	7,157	33,553
Foreign countries.....	1,280	1,175	1,156	5,574	5,318	4,973	3,601	13,753
Native groom, foreign bride ....	505	457	499	2,274	1,785	1,637	1,323	3,488
Foreign groom, native bride.....	506	445	481	2,187	1,827	1,645	1,165	3,876
Not stated .....								64
Total.....	4,136	3,846	3,936	18,629	16,776	16,068	13,246	54,734

It will be understood that in the above enumerations the *parent nativity* of the persons married is not considered, but the country where born.

Parties born in the United States, although children of foreign born parents, are reckoned as natives.

In the following table are given the *percentages* by birth, of native, foreign, and mixed marriages, in each of the last three years, and in the aggregate of twenty-five years, from 1858 to 1882, inclusive; also for four periods of five years each, from 1883 to 1902 :

TABLE XXXIV.

BIRTH-PLACE.	1902.	1901.	1900.	5 years, 1898-1902.	5 years, 1893-1897.	5 years, 1888-1892.	5 years, 1883-1887.	25 years, 1858-1882.
United States .....	44.61	46.00	45.73	46.22	46.81	48.62	54.02	61.30
Foreign countries.	30.95	30.55	29.37	29.88	31.65	30.95	27.19	25.13
Mixed nativity....	24.44	23.45	24.90	23.90	21.54	20.43	18.79	13.57
Total.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be of some interest to notice that by the exhibit of the two preceding tables it is shown that, although the marriages of the native born (whether the issue of foreign born parents or natives) have, as a rule, *increased in numbers*, they have also steadily *decreased in proportion*, with two or three exceptional

years, that is, to the whole number of marriages; while the marriages of the class of the exclusively foreign born have been, for the past thirty years, gradually increasing in proportion.

*Denominational.*—The 4,136 marriages in 1902 were performed by clergymen of various denominations, or by civil authority, as follows:

### DENOMINATIONAL.

Roman Catholic.....	1,861	Advent.....	21
Baptist.....	556	Independent.....	20
Protestant Episcopal.....	468	Seventh Day Baptist.....	14
Congregational.....	311	Unitarian.....	14
Methodist.....	269	Latter Day Saints.....	9
Free Baptist.....	132	Armenian.....	7
Universalist.....	96	Evangelical.....	4
Lutheran.....	74	Greek (Orthodox).....	2
Christian.....	59	New Jerusalem.....	1
Justices of Supreme Court.....	54	Second Advent..	1
Hebrew.....	53	Friends' Ceremony.....	1
United Presbyterian.....	35	Not stated.....	1
Presbyterian.....	25		
Advent Christian.....	25	Total.....	4,136
Primitive Methodist.....	23		

## AGES OF THE MARRIED.

In the following table the varying ages of persons married during 1902 are presented :

TABLE XXXV.

AGES OF GROOMS.	AGES OF BRIDES.												Number of Grooms.
	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	
Under 20.....	77	20	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	102
20 to 25.....	427	876	153	16	3	.....	.....	.....	.....	.....	.....	.....	1,475
25 to 30.....	160	610	435	82	17	5	1	.....	.....	.....	.....	.....	1,310
30 to 35.....	34	161	206	107	30	12	1	.....	.....	.....	.....	.....	551
35 to 40.....	10	52	78	69	59	19	3	4	1	.....	.....	.....	295
40 to 45.....	5	12	19	43	46	17	8	1	1	1	.....	.....	153
45 to 50.....	...	7	13	10	26	25	8	3	1	.....	.....	.....	93
50 to 55.....	...	4	2	7	9	6	11	6	7	1	.....	.....	53
55 to 60.....	.....	.....	4	2	9	5	6	7	4	1	.....	.....	38
60 to 65.....	.....	.....	.....	2	2	6	1	5	4	3	2	..	25
65 to 70 .....	.....	.....	.....	1	1	2	6	7	2	2	2	..	23
70 to 75.....	.....	.....	.....	.....	.....	.....	2	..	5	1	2	1	11
75 to 80.....	.....	.....	.....	.....	.....	.....	2	..	..	1	1	..	4
80 to 85.....	.....	.....	.....	.....	.....	.....	.....	.....	1	..	1	..	2
85 to 90 .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Number of Brides...	713	1,742	915	339	202	97	49	33	25	12	7	2	4,136

The extreme discrepancies in the ages of some couples married in 1902 were not so frequent as in some previous years.

The same results in 1902, in relation to numbers in the different age periods, may be presented in a different and perhaps clearer way as follows :

TABLE XXXVI.

1902.	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 to 85.	85 to 90.
Males.....	102	1,475	1,310	551	295	153	93	53	38	25	23	11	4	2	1
Females.....	713	1,742	915	339	202	97	49	33	25	12	7	2	....	....	....
Total persons.....	815	3,217	2,225	890	497	250	142	86	63	37	30	13	4	2	1

The whole number of persons in each division of ages, of both sexes, married in Rhode Island in each of the last thirty-seven years, that is, from 1866 to 1902, inclusive, is presented in the following table :

TABLE XXXVII.

YEARS.	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 to 85.	85 to 90.	Not stated.
1866.....	693	1,931	1,025	419	213	127	81	59	25	21	12	1	....	....	....	23
1867.....	696	1,886	1,104	416	211	148	91	48	37	18	18	5	3	1	....	9
1868.....	644	1,835	1,050	432	219	133	82	61	30	29	11	8	4	....	....	32
1869.....	642	1,814	1,051	468	237	134	79	46	35	15	11	2	3	2	....	49
1870.....	744	1,883	1,084	415	216	159	86	64	26	24	12	3	2	....	....	6
1871.....	697	1,914	1,118	392	228	115	73	56	35	22	6	7	3	....	....	6
1872.....	786	2,073	1,182	434	237	131	81	61	43	21	13	6	1	....	....	5
1873.....	762	2,177	1,156	507	253	140	87	68	35	24	12	6	6	....	....	27
1874.....	770	1,992	1,179	459	268	159	101	52	36	39	8	9	1	....	....	9
1875.....	681	2,058	1,108	475	252	150	101	60	32	29	13	4	1	....	....	6
1876.....	691	1,741	1,041	450	224	154	80	53	27	19	12	1	2	....	....	9
1877.....	631	1,745	1,118	459	244	125	92	52	46	14	15	11	2	1	....	9
1878.....	618	1,832	1,123	441	259	162	74	49	39	20	17	2	4	....	....	8
1879.....	639	1,879	1,156	481	272	123	78	56	39	26	18	9	2	2	1	11
1880.....	688	2,301	1,262	556	329	163	91	65	33	27	15	3	3	1	....	1
1881.....	599	2,208	1,410	547	298	187	107	54	34	31	16	5	1	1	....	2
1882.....	498	2,125	1,377	563	301	161	102	57	36	27	11	5	3	2	....	....
1883.....	497	2,108	1,370	486	319	183	115	73	31	20	14	3	2	1	....	....
1884.....	484	2,027	1,289	569	307	152	114	64	48	30	23	6	3	....	....	....
1885.....	438	1,973	1,296	540	309	163	102	57	45	27	13	7	3	....	1	2
1886.....	505	2,133	1,552	603	283	174	103	73	24	26	18	5	1	....	....	....
1887.....	501	2,308	1,552	607	294	162	114	49	39	23	19	7	3	....	....	....
1888.....	582	2,427	1,608	640	330	207	105	60	36	17	23	7	2	....	....	....
1889....	543	2,463	1,492	712	379	182	121	66	45	8	16	9	....	2	....	....
1890.....	596	2,693	1,632	673	320	206	102	69	41	29	20	7	2	....	....	....
1891.....	685	3,141	1,442	635	315	158	115	64	35	21	17	6	1	1	....	4
1892.....	668	3,011	1,729	732	389	201	122	60	35	30	14	4	3	....	....	6
1893.....	676	2,777	1,869	776	436	237	133	79	47	39	9	8	....	1	1	....
1894.....	613	2,760	1,613	680	375	183	150	74	39	29	17	3	5	1	....	....
1895.....	607	2,763	1,887	767	417	227	142	83	49	22	12	13	4	1	....	....
1896.....	617	2,647	1,841	713	352	204	124	61	45	24	18	5	3	....	....	....
1897.....	542	2,490	1,746	659	359	184	125	81	38	22	15	9	3	1	....	....
1898.....	579	2,639	1,795	675	394	187	127	82	38	20	10	7	3	....	....	....
1899.....	537	2,720	1,871	810	361	201	149	59	54	31	11	8	3	1	....	....
1900.....	729	2,982	2,155	935	444	240	155	103	74	24	24	6	1	....	....	....
1901.....	692	3,001	2,114	870	441	228	146	85	41	43	20	8	3	....	....	....
1902.....	815	3,217	2,225	890	497	250	142	86	63	37	30	13	4	2	1	....



In the following table will be found the number and proportion of the persons married under 20 years of age, both sexes, in nine periods of five years each, from 1856 to 1900, inclusive; for the whole period of forty-five years, and in 1901, and 1902.

TABLE XXXVIII.

5-YEAR PERIODS.	Total number of persons married.	Persons married under 20	Percentage under 20.
1856-1860.....	15,838	3,294	20.79
1861-1865.....	16,682	2,406	14.42
1866-1870.....	23,196	3,419	14.74
1871-1875.....	25,058	3,696	14.75
1876-1880.....	24,048	3,267	13.59
1881-1885.....	26,082	2,516	9.65
1886-1890.....	29,670	2,727	9.19
1891-1895.....	34,268	3,249	9.48
1896-1900.....	34,226	3,054	8.92
45 years, 1856-1900.....	229,068	27,628	12.06
1901.....	7,692	692	9.00
1902.....	8,272	815	9.85
Per cent., first fifteen years.....			16.37
Per cent., second fifteen years.....			12.60
Per cent., last two years.....			9.42

## PROPORTION TO SEX.

Table exhibiting the percentages of GROOMS in each division of ages, in each of the last forty-three years :

TABLE XXXIX.

YEARS.	Under 20.	20 to 25.	25 to 30.	30 to 40.	40 to 50.	50 and over.	Total.
1860.....	5.0	42.8	26.9	16.3	5.7	3.3	100.0
1861.....	4.6	44.5	25.4	15.5	5.8	4.2	100.0
1862.....	4.2	37.8	27.9	18.3	5.9	5.9	100.0
1863.....	3.5	38.0	29.6	17.2	5.8	5.9	100.0
1864.....	4.3	38.8	27.3	17.9	7.4	4.3	100.0
1865.....	3.5	37.0	28.4	18.9	7.5	4.7	100.0
1866.....	5.3	40.9	27.0	16.4	6.3	4.1	100.0
1867.....	4.3	40.1	27.9	16.8	6.8	4.1	100.0
1868.....	4.1	39.9	28.2	17.1	6.1	4.6	100.0
1869.....	4.3	39.6	27.7	18.5	6.1	3.8	100.0
1870.....	4.8	40.4	28.1	16.0	6.4	4.3	100.0
1871.....	5.3	40.1	28.9	16.5	4.9	4.3	100.0
1872.....	4.3	41.3	28.2	16.6	5.2	4.4	100.0
1873.....	3.8	42.4	26.7	17.0	6.0	4.1	100.0
1874.....	4.1	40.4	27.2	17.5	6.4	4.4	100.0
1875.....	3.5	40.9	27.8	17.6	6.1	4.2	100.0
1876.....	5.1	37.5	28.6	17.9	5.6	4.3	100.0
1877.....	4.3	36.0	30.2	18.7	5.9	6.9	100.0
1878.....	3.9	38.5	29.0	18.0	6.2	4.3	100.0
1879.....	3.9	37.8	28.8	19.3	5.4	4.8	100.0
1880.....	3.6	38.9	27.5	19.9	5.8	4.3	100.0
1881.....	2.8	37.2	29.7	19.5	6.8	4.0	100.0
1882.....	2.2	36.0	31.4	20.0	6.1	4.3	100.0
1883.....	2.9	36.2	31.7	17.7	7.2	4.3	100.0
1884.....	2.5	36.2	29.1	21.1	6.2	5.0	100.0
1885.....	2.6	34.7	30.2	20.9	6.8	4.8	100.0
1886.....	2.5	35.2	31.9	19.6	6.8	4.0	100.0
1887.....	1.7	37.1	31.6	19.6	6.2	3.8	100.0
1888.....	2.8	36.1	31.1	19.8	6.5	3.7	100.0
1889.....	2.3	37.6	27.8	21.3	6.6	4.4	100.0
1890.....	3.3	36.9	30.8	18.9	6.1	4.0	100.0
1891.....	3.2	44.7	26.4	17.2	5.2	3.3	100.0
1892.....	2.3	40.1	29.3	19.0	6.1	3.2	100.0
1893.....	2.9	35.3	30.7	21.0	6.3	3.8	100.0
1894.....	3.0	37.4	29.3	19.9	6.8	3.6	100.0
1895.....	2.2	36.0	30.6	21.0	6.3	3.9	100.0
1896.....	2.1	35.5	33.2	19.6	6.1	3.5	100.0
1897.....	2.3	35.5	32.6	19.3	6.3	4.0	100.0
1898.....	2.4	36.4	31.8	19.8	6.1	3.5	100.0
1899.....	2.3	35.0	30.9	21.6	6.6	3.6	100.0
1900.....	2.4	33.6	32.0	21.6	6.2	4.2	100.0
1901.....	2.1	35.3	31.4	21.5	6.1	3.6	100.0
1902.....	2.5	35.7	31.7	20.4	5.9	3.8	100.0

GROOMS.

Table exhibiting the percentages of BRIDES in each division of ages, in each of the last forty-three years :

TABLE XL.

YEARS.	Under 20.	20 to 25.	25 to 30.	30 to 40.	40 to 50.	50 and over.	Total.
1860.....	25.8	44.1	17.0	9.1	2.6	1.4	100.0
1861.....	29.6	42.0	15.2	7.8	4.1	1.3	100.0
1862.....	24.9	41.3	16.7	11.8	4.1	1.2	100.0
1863.....	24.9	42.6	16.9	9.8	4.1	1.7	100.0
1864.....	24.2	43.4	17.8	10.3	2.9	1.4	100.0
1865.....	22.6	43.3	19.1	11.0	3.5	1.5	100.0
1866.....	24.7	42.9	17.4	11.0	2.7	1.3	100.0
1867.....	25.4	40.5	19.3	10.0	3.4	1.4	100.0
1868.....	24.4	40.9	18.1	11.6	3.3	1.7	100.0
1869.....	24.1	40.5	18.7	12.1	3.4	1.2	100.0
1870.....	26.8	39.4	17.9	10.8	3.9	1.2	100.0
1871.....	24.6	41.9	19.1	10.1	3.1	1.2	100.0
1872.....	26.7	40.5	18.4	9.9	2.2	1.3	100.0
1873.....	25.3	40.8	17.5	12.0	2.7	1.7	100.0
1874.....	26.3	38.1	19.3	11.1	3.9	1.3	100.0
1875.....	23.9	42.1	16.8	11.8	4.0	1.4	100.0
1876.....	25.6	39.8	17.6	12.0	3.7	1.3	100.0
1877.....	23.4	40.4	18.8	12.1	3.6	1.7	100.0
1878.....	22.7	40.4	19.3	12.2	3.8	1.6	100.0
1879.....	22.8	40.7	19.4	12.1	3.0	2.0	100.0
1880.....	21.1	44.2	18.0	12.0	3.3	1.4	100.0
1881.....	19.0	43.0	21.5	11.2	3.8	1.5	100.0
1882.....	16.7	44.8	20.9	12.6	3.9	1.1	100.0
1883.....	16.2	44.2	20.6	13.2	4.3	1.5	100.0
1884.....	16.4	43.0	21.3	13.2	4.2	1.9	100.0
1885.....	14.9	44.6	21.8	13.2	3.8	1.7	100.0
1886.....	15.8	42.4	24.5	12.5	3.3	1.5	100.0
1887.....	15.9	44.1	22.8	12.1	3.5	1.6	100.0
1888.....	16.4	44.3	22.1	12.4	3.7	1.1	100.0
1889.....	15.1	43.7	21.5	14.7	3.4	1.6	100.0
1890.....	15.4	47.3	20.4	12.0	3.6	1.3	100.0
1891.....	17.4	49.9	17.0	11.4	3.1	1.2	100.0
1892.....	16.8	45.9	20.1	13.0	3.1	1.1	100.0
1893.....	16.2	43.0	22.0	13.3	4.1	1.4	100.0
1894.....	15.7	47.0	20.0	12.3	3.4	1.6	100.0
1895.....	15.2	43.0	23.4	12.8	4.3	1.3	100.0
1896.....	16.4	44.1	22.1	12.4	3.8	1.2	100.0
1897.....	14.9	43.9	23.1	13.2	3.5	1.4	100.0
1898.....	15.3	44.1	22.9	12.9	3.4	1.4	100.0
1899.....	14.8	44.3	23.6	12.5	3.6	1.2	100.0
1900.....	16.2	42.1	22.7	13.4	3.9	1.7	100.0
1901.....	15.8	42.8	23.5	12.6	3.7	1.6	100.0
1902.....	17.2	42.1	22.1	13.1	3.5	2.0	100.0

BRIDES.

It will be noticed in the preceding tables that the proportions of persons married of both sexes, under 20 years of age, largely decreased during the last decade.

Of grooms, the proportion, compared with the first decade, has decreased over 44 per cent., and of brides more than 37 per cent.

The proportion of males married, between the ages of twenty and twenty-five, has decreased nearly 10 per cent., and has correspondingly increased in the more advanced age periods.

The proportion of females married, between twenty and twenty-five years of age, has not varied much, while of those between twenty-five and forty there has been an increase of proportion similar to that of males.

#### NUMBER OF TIMES MARRIED.

There will be found in the following table the number of grooms and of brides who were married for the first, second, third, etc., time in 1902 :

TABLE XLI.

	First Marriage.	Second Marriage.	Third Marriage.	Fourth Marriage.	Total.
Grooms. ....	3,550	526	54	6	4,136
Brides.....	3,680	423	31	2	4,136

The proportion of *grooms* married for the first time, in 1902, was 85.8 per cent. of the whole number, and the proportion of *brides* married for the first time was 89 per cent.

The following table will show not only the number of times each of the parties was married, but also the number of bachelors and widowers who married spinsters, the number who married widows of first or second widowhood, etc., and of spinsters and widows who married bachelors, and widows of the second, third, or fourth marriage, etc.:

TABLE XLII.

GROOMS.	BRIDES.				Total Grooms.
	First.	Second.	Thrd.	Fourth.	
First Marriage.....	3,328	215	7	.....	3,550
Second Marriage.....	329	184	12	1	526
Third Marriage.....	21	21	11	1	54
Fourth Marriage....	2	3	1	.....	6
Total Brides.....	3,680	423	31	2	4,136

It will be seen, by Table XLII, that 222 bachelors married widows, 7 of whom married brides that had been twice married. Of the 586 widowers who married in 1902, 352 married spinsters, and 234 married widows. Of the widows who married widowers, 24 had been twice married, and 2 three times previously.

#### MARRIAGES OF PERSONS OF COLOR.

The number of marriages of persons of color in Rhode Island, in 1902, was 116. This includes seven marriages in which one of the parties was white. The number and color of the individuals were, therefore, 225 persons of color and 7 persons white. Of the white persons 2 were males and 5 were females. The marriages, however, may be properly included in the above class, inasmuch as the offspring of such marriages are persons of color.

The number reported during 1902, from the different towns, was as follows, viz.:

Coventry.....	1
East Greenwich.....	1
Warwick.....	1
Jamestown.....	1
Middletown.....	1
Newport City.....	8
New Shoreham.....	1
Portsmouth.....	1
Cranston.....	1
East Providence.....	4
Pawtucket.....	2
Providence City.....	85
Charlestown.....	1
Narragansett.....	2
Richmond.....	1
Westerly.....	8
Total.....	116

There were also 7 marriages of Chinese with white women.

## MARRIAGES OF THE DIVORCED.

The following table will give the towns from which returns of marriage with the facts of divorce were reported during 1902, the whole number of marriages of divorced persons, whether of one or both parties; also whether the second or third marriage of the divorced groom or bride:

TABLE XLIII.

TOWNS.	Number of Marriages.	Number of Divorced Persons Married.	Grooms.	Brides.	Second Marriage of Groom.	Third Marriage of Groom.	Second Marriage of Bride.	Third Marriage of Bride.	Fourth Marriage of Bride.
PROVIDENCE CITY.....	123	138	63	75	52	11	65	9	1
Barrington.....	1	1	1	.....	1	.....	.....	.....	.....
Bristol....	4	6	4	2	4	.....	1	1	.....
Warren.....	1	1	.....	1	.....	.....	1	.....	.....
Coventry.....	6	7	3	4	2	1	3	1	.....
East Greenwich.....	2	2	.....	2	.....	.....	2	.....	.....
Warwick.....	13	15	6	9	6	.....	9	.....	.....
Jamestown...	2	2	1	1	1	.....	1	.....	.....
NEWPORT CITY.....	4	4	1	3	1	.....	3	.....	.....
New Shoreham.....	1	1	1	.....	1	.....	.....	.....	.....
Tiverton.....	1	1	1	.....	1	.....	.....	.....	.....
Burrillville.....	6	7	3	4	3	.....	4	.....	.....
CENTRAL FALLS.....	5	8	5	3	5	.....	3	.....	.....
Cranston.....	7	7	3	4	3	.....	4	.....	.....
Cumberland.....	2	3	2	1	2	.....	1	.....	.....
East Providence.....	5	5	2	3	1	1	2	1	.....
Johnston.....	1	1	1	.....	1	.....	.....	.....	.....
PAWTUCKET.....	26	29	16	13	15	1	12	1	.....
Scituate.....	2	2	.....	2	.....	.....	2	.....	.....
WOONSOCKET.....	6	6	3	3	3	.....	3	.....	.....
Hopkinton.....	2	3	2	1	2	.....	1	.....	.....
North Kingstown.....	6	6	2	4	1	1	4	.....	.....
South Kingstown.....	3	4	2	2	2	.....	2	.....	.....
Richmond.....	1	1	1	.....	1	.....	.....	.....	.....
Westerly.....	6	7	2	5	2	.....	5	.....	.....
Total.....	236	267	125	142	110	15	128	13	1



There were 236 marriages, in 1902, in which one or both of the parties had been divorced.

The proportion of the *number of marriages* of which one or both of the parties had been divorced, to the whole number of marriages, was 5.7 per cent., or one in every 18.

But the proportion of divorced *persons* married during 1902, to the whole number of persons married in the same year, was about one in every 31, or 3.2 per cent., or 32 in every 1,000.

The number of divorced persons married, in 1902, was forty-three larger than in the previous year.

These 236 marriages of divorced persons were performed by clergymen of the different denominations, or by civil authority, as follows :

Baptist .....	77	Presbyterian.....	7
Methodist .....	38	Advent .....	6
Congregational.....	31	Protestant Episcopal .....	3
Free Baptist.....	20	Lutheran... ..	3
Universalist .....	19	Hebrew.....	1
Roman Catholic.....	8	Advent Christian.....	1
Christian .....	7	Justices of Supreme Court.....	15

*Marriage and Education.*—Of the number of persons married, in 1902, 594 signed their marriage certificates with a mark. The following will show the number of males and females who did so, and their nativity :

	Whole Number.	Native.	Foreign.
Males.....	226.....	27.....	199
Females.....	368.....	63.....	305
Total.....	594.....	90..	504

## DIVORCES, 1902.

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According to the returns made to the Secretary of the State Board of Health (State Registrar) by the clerks of the Supreme Courts of the different counties of Rhode Island, the number of applications for divorce, during 1902, was six hundred and seventy-one (671).

The number of divorces granted, during 1902, was four hundred and ninety-two.

There were 80 less applications, during 1902, than during the preceding year, and the number of divorces granted was 25 less.

Divorces are decreed for the following seven statute causes, viz.:

1. Adultery.
2. Extreme cruelty.
3. Willful desertion for five years of either of the parties, or for a shorter period, in the discretion of the court.
4. Continued drunkenness.
5. Neglect or refusal to provide necessities (having ability) for the subsistence of a wife.
6. Gross misbehavior and wickedness other than aforesaid.
7. Impotency.

Divorces are also decreed, or marriages set aside, in the discretion of the court, for ascertained affinity, consanguinity, idiocy, insanity, penitentiary crimes, and bigamous or otherwise illegal marriage.

The following table shows the number of applications for divorce, and the number granted, in 1902, in each county of the State; also the causes alleged for the applications:

TABLE XLIV.

COUNTIES.	Number of Applications.	Number Granted.	CAUSES ALLEGED.									Total Causes Alleged.
			Adultery.	Extreme Cruelty.	Willful Desertion.	Continued Drunkenness.	Neglect to Provide Necessaries, etc.	Other Gross Misbehavior.	Void Marriage.	Habitual use of Morphine.	Lived separate and apart for over 10 yrs.	
Bristol.....	10	10	2	4	4	3	8	3	....	....	....	21
Kent.....	37	26	4	10	15	8	27	7	....	....	....	71
Newport.....	42	17	7	11	22	11	24	14	....	....	....	89
Providence.....	551	413	87	210	212	136	329	77	3	1	12	1,067
Washington.....	31	26	5	12	20	8	18	17	....	....	....	80
Whole State.....	671	492	105	247	273	166	406	118	3	1	12	1,331

There were, during the year 1902, six hundred and seventy-one (671) applications for divorce, and the whole number of causes alleged was thirteen hundred and thirty-one (1,331). There was, therefore, an average of nearly two causes alleged in each application.

The causes alleged why divorces should be granted in the applications, during 1902, were 157 less in number than in 1901.

COUNTIES.	SEX.	CAUSES OF APPLICATIONS WHERE DIVORCE WAS GRANTED.								APPLICANT.			
		Adultery.	Extreme Cruelty.	Willful Desertion.	Continued Drunkenness.	Neglect to Provide Necessaries, etc.	Other Gross Misbehavior.	Void Marriage.	Separate and lived apart for more than 10 years.	Excessive and Intemperate use of Morphine.	Husband.	Wife.	Total.
Bristol County.....	{ Males.....	3	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	10
	{ Females..	.....	.....	2	.....	4	.....	.....	.....	1	.....	.....	
Kent County.....	{ Males.....	.....	1	2	.....	.....	1	.....	.....	.....	4	.....	27
	{ Females..	.....	4	2	5	12	.....	.....	.....	.....	23	.....	
Newport County....	{ Males.....	2	1	3	2	.....	3	.....	.....	.....	11	.....	43
	{ Females..	1	5	7	4	12	3	.....	.....	.....	32	.....	
Providence County..	{ Males.....	26	5	40	13	.....	2	1	.....	.....	87	.....	418
	{ Females...	9	57	51	33	180	.....	.....	1	.....	331	.....	
Washington County.	{ Males.....	2	.....	4	.....	.....	.....	.....	.....	.....	6	.....	26
	{ Females...	.....	6	4	1	9	.....	.....	.....	.....	20	.....	
Total.....	{ Males.....	33	7	49	15	.....	6	1	.....	.....	111	.....	524
	{ Females...	10	72	66	43	217	3	.....	1	1	413	.....	

LENGTH OF TIME MARRIED.						Bristol County.	Kent County.	Newport County.	Providence County.	Washington County.	Whole State.
Number under six months.....							1		5		6
Six months and under one year.....							1	1	19		21
One year and under five.....						4	9	9	158	13	193
Five years and under ten.....						3	7	12	126	7	155
Ten years and over. ....						3	18	20	229	11	81
Unstated.....							1		14		15

Average of years of marriage in Bristol County.....			11 years.
"	"	"	Kent County.....10 years, 4 months.
"	"	"	Newport County.....10 years, 11 months.
"	"	"	Providence County.....9 years, 7 months.
"	"	"	Washington County.....11 years.
"	"	"	Whole State.....9 years, 3 months.

In order to show the actual number of applications, and the number of divorces granted in each of the last thirty years, the following summary is presented :

	Applications for divorce.	Divorces granted.	Applications refused or continued, or withdrawn.
1873.....	261.....	173.....	88
1874.....	276.....	242.....	34 <sup>e</sup>
1875.....	227.....	158.....	69
1876.....	254.....	196.....	58
1877.....	257.....	178.....	79
1878.....	258.....	196.....	62
1879.....	255.....	246.....	9
1880.....	347.....	273.....	74
1881.....	350.....	268.....	82
1882.....	339.....	271.....	68
1883.....	321.....	257.....	64
1884.....	320.....	266.....	54
1885.....	293.....	227.....	66
1886.....	336.....	257.....	79
1887.....	322.....	248.....	74
1888.....	304.....	224.....	80
1889.....	366.....	274.....	92
1890.....	327.....	244.....	83
1891.....	362.....	275.....	87
1892.....	412.....	296.....	116
1893.....	529.....	301.....	228
1894.....	506.....	280.....	226
1895.....	516.....	373.....	143
1896.....	526.....	363.....	163
1897.....	544.....	372.....	172
1898.....	615.....	400.....	215
1899.....	648.....	412.....	236
1900.....	714.....	466.....	248
1901.....	751.....	517.....	234
1902.....	671.....	492.....	179
<hr/>			
30 years, total.....	12,207.....	8,745.....	3,462

The average annual proportion of decrees of divorce granted during the last thirty years, to the applications therefor, was 71.6 per cent.

During the last ten years the proportions were as follows :

Years.....	1893,	1894,	1895,	1896,	1897,	1898,	1899,	1900,	1901,	1902.
Per cent.....	56.9.....	55.3.....	72.3.....	69.0.....	68.4.....	65.0.....	63.6.....	65.3.....	68.8.....	73.3

The proportion of *divorces granted*, in 1902, to the whole number of marriages, during the same year, was *one divorce* to every eight and four-tenths marriages.

The proportion of *applications for divorce* to whole number of marriages, during the year, was one *application* to every six and two-tenths marriages.

The following table shows the number of divorces granted in each county, and the whole State, in each of the last thirty-four years, and the proportion of marriages to each divorce granted in each year:

TABLE XLV.

YEARS.	Bristol County.		Kent County.		Newport County.		Providence County.		Washington County.		Whole State.	
	Divorces Granted.	Marriages to one Divorce.	Divorces Granted.	Marriages to one Divorce.	Divorces Granted.	Marriages to one Divorce.	Divorces Granted.	Marriages to one Divorce.	Divorces Granted.	Marriages to one Divorce.	Divorces Granted.	Marriages to one Divorce.
1869.....	10	10.6	15	12.5	6	27.7	120	13.8	11	15.5	162	14.1
1870.....	3	22.7	18	11.8	6	26.3	152	11.3	21	9.3	200	11.8
1871.....	5	16.8	11	17.9	4	49.7	123	13.3	18	11.4	161	14.5
1872.....	8	10.2	13	15.7	8	22.9	149	12.6	22	8.9	200	12.7
1873.....	6	16.2	22	9.8	8	21.9	131	14.8	6	33.7	173	15.2
1874.....	10	8.9	20	8.0	6	29.0	190	10.0	16	11.6	242	10.5
1875.....	2	50.0	18	8.8	7	23.4	120	14.9	11	20.5	158	15.7
1876.....	6	14.5	15	12.8	7	20.5	148	11.1	20	8.8	190	11.5
1877.....	7	12.0	9	16.3	7	26.0	134	12.4	21	9.9	178	12.8
1878.....	4	26.0	11	13.3	13	12.8	156	10.9	12	17.3	196	11.9
1879.....	5	18.8	19	9.0	7	24.1	195	9.1	20	9.7	246	9.7
1880.....	8	12.1	23	9.4	11	17.6	208	9.7	23	17.0	273	10.1
1881.....	6	20.1	26	7.3	10	16.9	207	10.0	19	11.0	268	10.4
1882.....	6	15.0	18	10.3	15	13.0	221	8.9	11	16.2	271	9.7
1883.....	6	15.8	15	11.5	9	21.2	214	9.2	13	13.3	257	10.2
1884.....	4	16.7	20	8.0	12	15.7	209	9.3	21	8.2	266	9.6
1885.....	3	23.0	9	18.6	17	11.2	186	10.1	12	15.0	227	11.0
1886.....	5	16.0	17	11.0	15	12.3	194	10.9	26	7.3	257	10.7
1887.....	1	75.0	23	8.0	13	13.4	187	11.8	24	7.9	248	11.4
1888.....	5	15.8	14	13.5	4	46.0	188	12.5	13	16.5	224	13.5
1889.....	6	12.5	27	8.3	14	14.0	211	11.2	16	10.8	274	11.1
1890.....	4	27.5	19	12.1	1	232.0	196	12.3	24	8.8	244	13.0
1891.....	10	8.4	20	11.2	17	12.6	214	11.2	14	14.3	275	12.1
1892.....	2	49.5	19	12.4	20	11.6	236	11.6	19	10.4	296	11.8
1893.....	3	38.0	10	23.8	21	9.9	235	11.5	22	8.0	301	11.8
1894.....	7	16.0	22	9.0	18	12.3	207	12.4	26	6.8	280	11.7
1895.....	8	10.9	17	9.9	11	21.3	318	8.8	19	11.2	373	9.4
1896.....	7	12.4	21	7.5	18	11.3	304	8.8	13	16.1	363	9.2
1897.....	9	9.3	20	8.5	16	12.9	306	8.1	21	9.7	372	8.4
1898.....	7	12.4	22	9.3	19	9.9	333	7.8	19	9.8	400	8.2
1899.....	6	13.5	20	11.9	18	12.0	355	7.7	13	13.0	412	8.3
1900.....	8	10.6	19	12.4	15	17.1	400	7.9	24	8.8	466	8.5
1901.....	8	11.6	19	13.5	16	13.3	456	6.8	18	10.4	517	7.4
1902.....	10	9.4	26	10.3	17	14.4	413	8.0	26	8.4	492	8.4



The ratio of divorces granted in the entire State, during 1902, to the whole number of marriages during the same year, was one divorce to every eight and four-tenths marriages, as previously stated.

During the ten years 1869 to 1878, inclusive, the ratio of divorce to number of marriages was one divorce to every thirteen; during the ten years 1879 to 1888, inclusive, the ratio was one divorce to every ten and six-tenths marriages.

The average of the last ten years was one divorce to every nine and one-tenth marriages.

During the thirty-four years 1869-1902 the average proportions of divorce to marriage, in the several counties and the State, have been as follows :

Bristol County.....	One divorce to every 19.4 marriages.
Kent County.....	One divorce to every 11.6 marriages.
Newport County.....	One divorce to every 25.2 marriages.
Providence County.....	One divorce to every 10.6 marriages.
Washington County.....	One divorce to every 12.2 marriages.
Whole State.....	One divorce to every 11.1 marriages.

*Table showing the Number of Marriages to every Decree of Divorce, in five of the New England States, during the twenty-six years from 1877 to 1902, inclusive.*

TABLE XLVI.

STATES.	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Rhode Island...	12.8	11.9	9.7	10.1	10.4	9.7	10.2	9.6	11.0	10.7	11.4	13.5	11.1	13.0	12.1	11.8	11.8	11.7	9.4	9.2	8.4	8.2	8.3	8.5	7.4	8.4
Maine.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.4	9.2	8.3	8.4	8.3	7.4	6.7	6.7	6.8	7.1	6.5
New Hampshire.....	.....	.....	.....	7.7	9.2	10.9	12.8	10.4	10.9	8.3	10.7	8.7	9.8	9.5	9.5	11.7	10.3	12.6	9.9	9.9	8.8	8.5	8.6	9.3	8.3	8.4
Vermont. ....	15.0	14.0	21.0	20.0	16.0	17.8	16.4	13.5	28.8	20.0	13.5	16.9	19.6	18.3	17.1	17.4	15.9	12.3	9.7	11.2	11.9	13.0	12.3	13.2	13.5	....
Massachusetts..	23.1	21.4	23.4	26.8	40.9	34.3	27.8	28.2	26.4	30.0	24.5	30.6	26.9	31.8	27.1	28.5	21.8	18.6	24.2	14.7	20.5	18.7	20.2	19.3	18.1	17.4
Connecticut....	10.1	10.7	13.4	13.9	11.6	12.8	12.1	14.9	13.3	14.2	14.9	13.8	10.7	13.2	13.7	13.2	16.6	15.9	15.9	14.5	16.0	15.3	15.9	15.5	13.9	16.6

## DEATHS, 1902.

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The number of deaths registered in Rhode Island during 1902, according to the returns made to the State Registrar, was seven thousand, nine hundred and fifty-five (7,955).

This number is smaller by 11 than that of 1901.

The death rate (17.8 in every 1,000 living persons) was 0.4 lower than that of the previous year.

The following summary will show the death rates per 1,000 for each of the last five census years, in comparison with the last five years :

1880	1885	1890	1895	1900	1898	1899	1900	1901	1902
17.5.....	17.7.....	20.7.....	19.6.....	20.6.....	16.7.....	17.6.....	20.6.....	18.2.....	17.8

Since 1876 the returns have been more complete than previously, and during the last ten years few deaths have occurred in the State which were not reported.

On the following page will be found the death rates, by counties, for forty-two years.

TABLE XLVII.

*Death rates per 1,000 living, by counties, for forty-two years, from 1861 to 1902, inclusive; also the average rate of each period of five years each, from 1861 to 1900, inclusive, for the whole State.*

YEARS.	Bristol.	Kent.	Newport.	Providence.	Washington.	State.	STATE. ANNUAL AVERAGE OF FIVE-YEAR PERIODS, 1861-1900.
Five years, 1861-1865 .....	17.7	15.9	18.9	17.7	12.4	17.1	....17.1 per 1,000 living.
1866.....	19.2	14.2	17.3	16.6	11.4	16.1	....15.6 per 1,000 living.
1867.....	17.0	15.1	15.0	16.4	10.9	15.6	
1868.....	15.7	13.7	14.7	17.0	10.0	15.7	
1869.....	17.9	16.7	13.2	16.0	12.8	15.6	
1870.....	15.5	13.5	14.1	15.5	12.0	14.9	
1871.....	16.3	17.5	12.2	15.9	12.3	15.4	....17.5 per 1,000 living.
1872.....	21.1	16.1	14.5	21.2	14.7	19.1	
1873.....	18.4	13.8	19.0	22.0	15.1	20.2	
1874.....	14.7	13.2	10.8	17.7	13.7	16.3	
1875.....	14.9	14.9	13.5	17.5	15.5	16.7	
1876.....	14.7	11.7	13.5	16.8	15.9	15.9	....16.8 per 1,000 living.
1877.....	18.2	13.1	12.4	18.7	12.8	17.2	
1878.....	17.5	14.2	13.7	18.3	13.0	17.2	
1879.....	13.2	15.1	14.8	17.2	11.1	16.2	
1880.....	19.2	14.9	14.5	18.5	12.7	17.5	
1881.....	17.9	16.5	15.7	19.3	11.9	18.1	....18.0 per 1,000 living.
1882.....	16.5	15.3	17.2	19.7	11.0	18.4	
1883.....	17.7	14.6	17.7	20.8	9.8	19.1	
1884.....	17.7	17.1	14.5	17.8	12.6	16.9	
1885.....	16.3	16.4	14.5	18.5	14.0	17.7	
1886.....	19.2	17.5	15.0	19.2	15.0	18.8	....19.8 per 1,000 living.
1887.....	18.2	15.5	15.1	21.1	15.5	19.8	
1888.....	21.3	18.4	18.0	21.0	16.0	20.4	
1889.....	17.6	20.1	14.7	19.2	14.6	19.0	
1890.....	22.1	17.6	16.5	22.1	13.5	20.7	
1891.....	20.5	18.0	20.6	18.6	12.6	19.6	....19.6 per 1,000 living.
1892.....	20.0	20.7	20.1	20.2	15.2	20.1	
1893.....	19.9	19.4	17.9	19.9	12.6	19.6	
1894.....	16.5	19.8	16.9	19.1	16.4	19.1	
1895.....	20.9	17.4	15.9	20.1	15.0	19.6	
1896.....	17.9	18.8	17.0	19.2	15.3	19.1	....18.3 per 1,000 living.
1897.....	18.6	16.7	16.2	17.6	14.7	17.6	
1898.....	15.0	15.6	15.5	16.7	14.5	16.7	
1899.....	17.6	16.8	17.6	17.6	14.1	17.6	
1900.....	22.6	23.6	18.7	19.9	18.2	20.6	
1901.....	17.9	19.7	16.5	17.8	16.2	18.2	
1902.....	18.4	17.7	18.1	17.6	12.8	17.8	

Annual average, 40 years, 1861-1900.....17.8 per 1,000 living.

## SEX OF DECEDENTS.

Of the 7,955 persons whose deaths were returned during the year 1902, 4,042 were males and 3,913 were females; the ratio standing at 103.3 males to each 100 females, or about 508 males and 492 females in every 1,000 decedents.

The following Table will show the number and proportion of males and females among the *decedents* in Rhode Island during the ten years 1853 to 1862, inclusive; also in each of the forty years from 1863 to 1902, inclusive, and for the entire period of fifty years:

TABLE XLVIII.—DEATHS.

	Males.	Females.	Males to every 100 females.
10 years, 1853-1862.....	10,930.....	11,269.....	96.9
1863.....	1,621.....	1,586.....	102.2
1864.....	1,633.....	1,727.....	92.4
1865.....	1,686.....	1,719.....	98.1
1866.....	1,497.....	1,473.....	101.5
1867.....	1,442.....	1,447.....	99.7
1868.....	1,413.....	1,490.....	94.3
1869.....	1,696.....	1,686.....	100.6
1870.....	1,588.....	1,650.....	96.2
1871.....	1,621.....	1,723.....	94.1
1872.....	2,118.....	2,129.....	99.4
1873.....	2,166.....	2,237.....	95.5
1874.....	2,111.....	2,118.....	99.7
1875.....	2,108.....	2,209.....	95.4
1876.....	1,969.....	2,147.....	91.7
1877.....	2,132.....	2,318.....	92.0
1878.....	2,161.....	2,280.....	94.8
1879.....	2,183.....	2,289.....	95.4
1880.....	2,366.....	2,463.....	96.0
1881.....	2,467.....	2,549.....	96.8
1882.....	2,487.....	2,587.....	96.5
1883.....	2,627.....	2,655.....	99.0
1884.....	2,486.....	2,655.....	93.6
1885.....	2,607.....	2,782.....	93.7
1886.....	2,833.....	3,016.....	93.9
1887.....	3,177.....	3,163.....	100.4
1888.....	3,199.....	3,395.....	95.4
1889.....	3,093.....	3,166.....	97.7
1890.....	3,501.....	3,433.....	102.0
1891.....	3,341.....	3,279.....	101.9
1892.....	3,725.....	3,671.....	101.5
1893.....	3,789.....	3,651.....	103.8
1894.....	3,559.....	3,601.....	98.8
1895.....	3,799.....	3,736.....	101.6
1896.....	2,874.....	3,630.....	106.7
1897.....	3,587.....	3,523.....	106.7
1898.....	3,554.....	3,351.....	106.1
1899.....	3,725.....	3,733.....	99.8
1900.....	4,473.....	4,350.....	102.8
1901.....	4,066.....	3,900.....	104.2
1902.....	4,042.....	3,913.....	103.3
50 years.....	118,452.....	119,708.....	98.7

The following Table of *births*, during the same period of time as the preceding, will show by comparison the different proportions of the sexes in the two classes of events:

TABLE XLIX.—BIRTHS.

	Males.	Females.	Males to every 100 females.
10 years, 1853-1862.....	18,377.....	17,200.....	106.4
1863.....	1,892.....	1,788.....	105.8
1864.....	1,949.....	1,942.....	100.3
1865.....	2,096.....	1,857.....	112.9
1866.....	2,546.....	2,256.....	108.0
1867.....	2,655.....	2,464.....	107.0
1868.....	2,745.....	2,627.....	104.5
1869.....	2,685.....	2,560.....	104.9
1870.....	2,679.....	2,536.....	104.9
1871.....	2,878.....	2,800.....	105.8
1872.....	3,085.....	3,058.....	100.9
1873.....	3,135.....	2,887.....	108.6
1874.....	3,311.....	3,155.....	104.9
1875.....	3,362.....	3,146.....	106.9
1876.....	3,291.....	3,038.....	108.3
1877.....	3,163.....	3,072.....	103.0
1878.....	3,402.....	3,312.....	102.7
1879.....	3,259.....	3,091.....	105.4
1880.....	3,241.....	3,054.....	106.1
1881.....	3,498.....	3,263.....	107.2
1882.....	3,500.....	3,316.....	105.8
1883.....	3,548.....	3,498.....	101.4
1884.....	3,713.....	3,592.....	103.4
1885.....	3,591.....	3,437.....	104.4
1886.....	3,897.....	3,724.....	104.6
1887.....	3,968.....	3,700.....	107.4
1888.....	4,023.....	3,817.....	105.4
1889.....	4,193.....	4,027.....	104.1
1890.....	4,351.....	4,199.....	103.2
1891.....	4,926.....	4,500.....	109.5
1892.....	4,765.....	4,505.....	109.3
1893.....	5,105.....	4,943.....	103.3
1894.....	5,129.....	4,856.....	105.6
1895.....	5,136.....	4,746.....	108.2
1896.....	5,461.....	5,289.....	103.3
1897.....	5,493.....	5,362.....	103.5
1898.....	5,443.....	5,287.....	102.9
1899.....	5,591.....	5,240.....	106.7
1900.....	5,625.....	5,459.....	103.0
1901.....	5,944.....	5,348.....	111.1
1902.....	5,776.....	5,451.....	106.0
50 years.....	172,436.....	163,502.....	105.6



## SEASON AND MORTALITY.

The whole number of decedents, and the sex of the same, in each month of the year 1902, and in each division of the State, may be found in Table V, on the tenth and eleventh pages.

The influence of season upon mortality may be further illustrated by the following table, which shows the number and percentage of deaths, compared with the whole number of deaths, in each quarter of each of the last five years, and in the aggregate for fifty years, 1853 to 1902, inclusive :

TABLE L.

SEASON.	1902.		1901.		1900.		1899.		1898.		50 years, 1853-1902.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
January-March .	1,987	24.98	2,179	27.35	2,400	27.20	2,043	27.39	1,627	23.56	57,240	24.68
April-June .....	1,833	23.04	1,761	22.11	2,220	25.16	1,699	22.78	1,643	23.79	51,185	22.07
July-September.	2,149	27.01	2,102	27.14	2,315	26.24	2,053	27.53	1,998	28.94	66,203	28.55
October-Dec ....	1,986	24.97	1,864	23.40	1,888	21.40	1,663	22.30	1,637	23.71	57,273	24.70
Total .....	7,955	100.00	7,966	100.00	8,823	100.00	7,458	100.00	6,905	100.00	231,901	100.00

Comparing the percentages of 1902 with those of the fifty years, we find that of the first quarter is 0.30 per cent. larger ; the second quarter is 0.97 per cent. larger ; the third quarter 1.54 per cent. less ; and the last quarter 0.27 per cent. greater than for the average of the fifty years. The greatest mortality for any one season of any year is usually found in the third quarter.

TABLE LI.

*Showing the Months in the Order of Largest Mortality for Eight Years.*

1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.
August..... 767	March..... 761	April..... 988	January..... 785	August..... 730	August..... 735	July..... 836	March..... 779
December.... 758	January..... 742	March..... 915	August..... 752	September... 673	February..... 721	August..... 810	July..... 743
July..... 712	August..... 735	August..... 829	July..... 717	July..... 595	September... 647	March..... 635	August..... 738
March..... 680	July..... 732	July..... 823	March..... 638	December..... 585	July..... 642	April..... 634	April..... 630
September.... 670	September... 695	February.... 752	December.... 636	March..... 582	March..... 619	May..... 626	October..... 629
January..... 665	February.. . 676	January..... 733	April..... 634	April..... 576	January..... 597	January..... 617	September.... 610
April..... 648	October..... 648	December.... 678	February.... 620	May..... 568	October..... 572	June..... 596	December..... 610
February..... 642	April..... 638	September... 663	September... 584	October..... 543	December..... 559	February..... 581	February..... 606
May..... 637	December.... 635	May..... 645	May..... 547	January..... 540	April..... 538	September... 566	January..... 577
October..... 622	May..... 596	October..... 629	November.... 522	November.... 509	May..... 520	December..... 561	November..... 570
November..... 606	November.... 581	June..... 587	June..... 518	February..... 505	June..... 482	October..... 556	May..... 562
June..... 548	June..... 527	November.... 581	October..... 505	June..... 499	November.... 478	November.... 486	June..... 481
—	—	—	—	—	—	—	—
7,955	7,966	8,823	7,458	6,905	7,110	7,504	7,535

## NATIVITY OF DECEDENTS.

There may be found in Table I, on pages 2-5, the number of decedents in 1902, by division of the two classes of native and foreign born.

Of the whole number of decedents, 7,955, 607 were native born, that is, were born in the United States, and 2,348 were born outside of the United States.

## PARENTAGE OF DECEDENTS.

Of the whole number of decedents, 7,955, reported in 1902, 3,247 were of native, and 4,708 were of foreign and unknown parentage.

By the term "foreign *parentage*" is meant the decedents whose *fathers* were born in some other country and not in the United States. The grandchildren of the foreign born are reckoned as of native parentage, if their fathers were born in the United States.

The following thirteen towns reported a larger number of decedents of foreign *parentage* than of native, namely: Bristol, Warren, Warwick, Tiverton, Burrillville, Central Falls, Cumberland, Johnston, Lincoln, North Providence, Pawtucket, Providence, and Woonsocket; also the State Institutions at Cranston.

These numbers varied from a moderate excess to three or four times as many of foreign as of native *parentage*.

The following Table gives the number and proportion in every one thousand deaths of decedents of native and of foreign *parentage* in each of the last five years; and in the aggregate for forty-five years, or from 1858 to 1902, inclusive:

TABLE LII.

PARENTAGE.	1902.		1901.		1900.		1899.		1898.		45 years, 1858-1902.	
	Number.	Per 1,000.	Number.	Per 1,000.	Number.	Per 1,000.	Number.	Per 1,000.	Number.	Per 1,000.	Number.	Per cent.
Native.....	3,247	408.2	3,264	409.7	3,745	424.5	3,097	415.0	2,938	425.5	120,218	489.5
Foreign.....	4,708	591.8	4,702	590.3	5,078	575.5	4,361	585.0	3,967	574.5	125,395	510.5
Total .....	7,955	1000.0	7,966	1000.0	8,823	1000.0	7,458	1000.0	6,905	1000.0	245,613	1000.0

## AGE OF DECEDENTS.

In Table I, on pages 2-5, may be found the aggregate and average age of all the decedents whose deaths occurred in 1902, and with the age of each sex in each town and county in the State.

By that Table it will be seen that the average age of all the male decedents in the State, in 1902, was 34.32 years, and that the average age of all the female decedents, in the same year, was 36.70 years; the average age of all decedents, of both sexes, was 35.49 years.

The average age of the total decedents in the State, in 1902, was one year less than the average for 1901.

The average age of the male decedents, in 1902, was sixty-nine one-hundredths of a year less, and the average age of the female decedents was one and thirty-seven one-hundredths of a year less, than in the previous year.

The following Table will present, separately, the average age of the male and female decedents, and the average age of all decedents, in each year for forty-two years; also the average age in seven periods of five years each, from 1861 to 1900, inclusive:

TABLE LIII.

YEARS.	Average Age of Males.	Average Age of Females.	Average Age of All.	Average Age, 5-year periods, 1861-1900.
1861.....	26.95	30.58	28.82	.....29.32
1862.....	29.64	32.65	31.15	
1863.....	28.29	30.86	29.56	
1864.....	28.13	30.43	29.46	
1865.....	26.38	28.97	27.69	
1866.....	31.13	35.07	33.09	.....32.42
1867.....	32.16	35.86	34.01	
1868.....	30.47	35.08	32.85	
1869.....	28.62	31.29	30.25	
1870.....	31.02	32.75	31.90	
1871.....	32.57	34.43	33.52	.....30.16
1872.....	28.41	31.15	29.77	
1873.....	26.18	28.62	27.42	
1874.....	28.03	31.66	28.86	
1875.....	29.72	32.75	31.27	
1876.....	31.47	33.21	32.37	.....31.21
1877.....	29.25	31.56	30.45	
1878.....	29.02	31.11	30.09	
1879.....	31.29	33.24	32.29	
1880.....	29.62	32.06	30.86	
1881.....	30.99	34.07	32.55	.....33.99
1882.....	31.33	35.57	33.50	
1883.....	33.64	37.44	35.55	
1884.....	32.29	35.12	33.76	
1885.....	33.53	35.60	34.59	
1886.....	33.02	34.91	34.01	.....33.42
1887.....	30.97	32.91	31.95	
1888.....	33.17	35.74	34.53	
1889.....	32.20	35.74	34.00	
1890.....	31.04	34.26	32.62	
1891.....	32.70	36.28	34.47	.....33.96
1892.....	32.96	37.75	35.34	
1893.....	30.97	33.99	32.46	
1894.....	32.47	34.40	33.44	
1895.....	31.70	36.40	34.08	
1896.....	30.86	34.47	32.61	.....34.53
1897.....	33.71	37.06	35.37	
1898.....	34.34	36.34	35.31	
1899.....	34.04	37.30	35.67	
1900.....	31.81	35.58	33.67	
1901.....	35.01	38.07	36.51	
1902.....	34.32	36.70	35.49	

The above Table shows that the average longevity of the decedents in Rhode Island increased over five years during a period of forty years, ending with 1900.

The following Table will present some of the facts of the preceding as occurring in the different divisions of the State, as well as of the State at large. It will show the average age of the decedents in each of the larger divisions of the State, in each of the last three years, and also the average of each of eight periods of five years each, comprising the forty years from 1863 to 1902, inclusive:

TABLE LIV.

DIVISIONS OF THE STATE.	1902.	1901.	1900.	1895-1902, 5 years.	1890-1897, 5 years.	1885-1892, 5 years.	1880-1887, 5 years.	1875-1882, 5 years.	1870-1877, 5 years.	1865-1872, 5 years.	1860-1867, 5 years.
Bristol County.....	40.38	45.36	36.06	39.74	42.78	39.76	38.45	36.68	33.61	35.12	34.78
Kent County.....	33.65	35.49	29.81	32.97	31.07	32.22	37.66	37.11	36.20	34.77	35.81
Newport County.....	37.90	39.31	39.06	39.94	39.98	40.63	42.41	39.21	40.68	40.04	33.54
Providence County *....	33.10	33.24	32.48	33.14	30.79	31.63	31.83	30.60	28.46	25.26	29.16
Providence City.....	34.12	35.47	33.01	33.91	32.03	33.44	32.19	29.50	27.19	25.45	28.50
Washington County.....	53.06	49.92	44.41	49.70	46.55	46.77	43.39	41.01	41.14	39.67	30.87
Whole State.....	35.49	35.61	33.67	35.15	33.59	34.19	33.97	31.86	30.28	31.66	30.73

By reference to Table LIV it will be seen that the average age of all decedents during the last five years is more than four years greater than the first period of five years, 1863-1867.

#### PERCENTAGE OF DECEDENTS BY DIFFERENT AGES.

In Table VI, on pages 12 to 19, inclusive, will be found the number of deaths in 1902, in each town and each county, of each sex, and in each period of life, with the percentage of the whole number of deaths in each division to the population of the same, geometrically estimated from the census of 1900.

The following Table shows the percentage of decedents in each division of ages, to whole number of deaths, in each of the last five years, and in the aggregate for four periods: one of twenty years and seven months, from June 1st, 1852, to December 31, 1872, inclusive; one of ten years, from 1873 to 1882, inclusive; one of ten years, from 1883 to 1892, inclusive; and one of ten years, from 1893 to 1902, inclusive.

\* Exclusive of Providence city.



TABLE LV.

PERIODS OF LIFE.	1902.	1901.	1900.	1899.	1898.	10 years, 1893 to 1902.	10 years, 1883 to 1892.	10 years, 1873 to 1882.	20 years, 7 months, 1852 to 1872.
Under one year.....	23.3	21.1	23.4	22.7	22.9	22.8	20.4	18.9	17.3
1 and under 2.....	4.5	4.9	5.7	5.1	4.7	5.0	5.6	7.6	8.8
2 and under 5.....	4.0	4.1	5.1	4.2	4.1	4.8	5.8	8.4	8.7
Total.....	31.8	30.1	34.2	32.0	31.7	32.6	31.8	34.9	35.3
5 and under 10.....	2.3	2.3	2.8	2.1	2.4	2.8	3.5	5.0	4.8
10 and under 20.....	3.8	3.8	3.6	3.7	3.8	4.1	5.1	5.8	6.0
20 and under 30.....	7.6	8.2	7.7	7.2	8.0	8.0	8.7	9.2	9.6
30 and under 40.....	7.8	7.8	7.2	8.4	8.1	7.8	7.9	7.8	8.4
40 and under 50.....	7.9	9.0	7.7	7.9	8.1	8.1	7.5	6.9	7.3
50 and under 60.....	10.2	10.3	9.9	9.7	10.1	9.4	8.5	7.2	7.0
60 and under 70.....	11.1	11.5	10.5	11.1	11.1	10.7	9.7	8.2	7.6
70 and under 80.....	10.8	10.4	10.1	11.2	10.1	10.1	9.9	8.8	7.2
80 and under 90.....	5.7	5.6	5.4	5.6	5.6	5.4	5.9	5.1	5.1
Over 90 and not stated.....	1.0	1.0	0.9	1.1	1.0	1.0	1.5	1.1	1.1
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Compared with the average of thirty years, ending with 1882, the average proportion of the mortality of children under one year of age, during the last ten years, was 4.4 per cent., or about 44 in every one thousand deaths more than the average in the longer period.

The proportions in the other periods were not greatly different from previous years, although there was some increase of percentage in the age periods above fifty years.

The following Table will present the varying proportions of deaths to whole number of deaths, in four different periods of life, from 50 years of age to 90 years, grouped in five periods of averages of ten years each, 1853-1902; also in 1898, 1899, 1900, 1901, and 1902.

TABLE LVI.

AGE OF DECEDENTS.	1st Decade, 1853-1862.	2d Decade, 1863-1872.	3d Decade, 1873-1882.	4th Decade, 1883-1892.	5th Decade, 1893-1902.	1898.	1899.	1900.	1901.	1902.
	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>	<i>Pr.ct.</i>
50 to 60.....	6.7	7.3	7.2	8.5	9.4	10.1	9.7	9.9	10.3	10.2
60 to 70.....	6.9	8.3	8.2	9.7	10.7	11.1	11.1	10.5	11.5	11.1
70 to 80.....	7.3	8.4	8.8	9.9	10.1	10.1	11.2	10.1	10.4	10.8
80 to 90.....	4.6	5.4	5.1	5.9	5.4	5.6	5.6	5.4	5.6	5.7

## COLORED DECEDENTS.

There were 243 deaths of persons of color during 1902.

The towns from which they were returned, and number in each, were as follows:

Providence City.....	160
Barrington.....	1
Bristol.....	1
Warren.....	1
East Greenwich.....	1
Warwick.....	4
Jamestown.....	3
Newport City.....	32
Tiverton.....	1
Cranston.....	1
State Institutions.....	16
East Providence.....	5
Lincoln.....	1
Pawtucket.....	3
Hopkinton.....	1
Narragansett.....	1
South Kingstown.....	8
Westerly.....	3
Total.....	243

Months.	Deaths.	Months.	Deaths.	Months.	Deaths.	Months.	Deaths.
January .....	25	April.....	20	July.....	19	October.....	23
February.....	25	May.....	18	August.....	17	November.....	16
March.....	20	June.....	20	September.....	18	December.....	23
—	—	—	—	—	—	—	—
First Quarter.....	70	Second Quarter...58		Third Quarter...54		Fourth Quarter....61	

First six months, 128; second six months, 115. Total, 243.

The following summary will show the proportion, to the whole colored population, of each of the events of birth, marriage, and death of colored persons, during the twenty-five years from 1878 to 1902, inclusive:

	One Birth in every	One Person Married in every	One Death in every
1878.....	36.4.....	39.2.....	40.2.....
1879.....	39.6.....	51.4.....	37.3.....
1880.....	47.1.....	43.3.....	44.0.....
1881.....	34.3.....	39.2.....	35.4.....
1882.....	36.8.....	44.5.....	45.4.....
1883.....	33.4.....	63.3.....	39.7.....
1884.....	34.8.....	46.0.....	34.5.....
1885.....	36.7.....	51.7.....	40.1.....
1886.....	34.6.....	43.2.....	37.8.....
1887.....	35.8.....	38.9.....	37.2.....
1888.....	37.6.....	55.0.....	38.0.....
1889.....	38.7.....	52.0.....	40.0.....
1890.....	45.3.....	57.6.....	41.0.....
1891.....	42.8.....	41.2.....	36.4.....
1892.....	40.6.....	38.5.....	31.3.....
1893.....	38.6.....	44.2.....	31.3.....
1894.....	34.3.....	56.6.....	34.2.....
1895.....	35.9.....	42.6.....	32.1.....
1896.....	35.1.....	38.9.....	37.9.....
1897.....	38.5.....	36.0.....	41.3.....
1898.....	37.9.....	48.2.....	41.8.....
1899.....	39.4.....	41.7.....	36.0.....
1900.....	39.5.....	37.4.....	37.7.....
1901.....	35.5.....	44.3.....	35.5.....
1902.....	43.2.....	39.3.....	37.5.....

In every one thousand of the colored population there were, in 1902:

Of Births.	Of Persons Married	Of Deaths.
23.1.....	25.4.....	26.6

The following exhibit will show the number of living births, marriages, and deaths among the colored population of Rhode Island, during ten years, from 1861 to 1870, inclusive; ten years, from 1871 to 1880, inclusive; ten years, from 1881 to 1900, inclusive; ten years, from 1891 to 1900, inclusive; for the years 1901 and 1902 and the aggregate of the same.

10 years, 1861-1870 .....	1,131 births .....	557 marriages.....	1,153 deaths.
10 years, 1871-1880 .....	1,615 births .....	705 marriages.....	1,573 deaths.
10 years, 1881-1890. ....	1,954 births .....	752 marriages.....	1,860 deaths.
10 years, 1891-1900 ..	2,080 births .....	957 marriages.....	2,218 deaths.
1901 .....	252 births .....	103 marriages .....	257 deaths.
1902 .....	211 births .....	116 marriages.....	243 deaths.
<hr/>			
Total, 42 years.....	7,243 births.....	3,190 marriages.....	7,304 deaths.

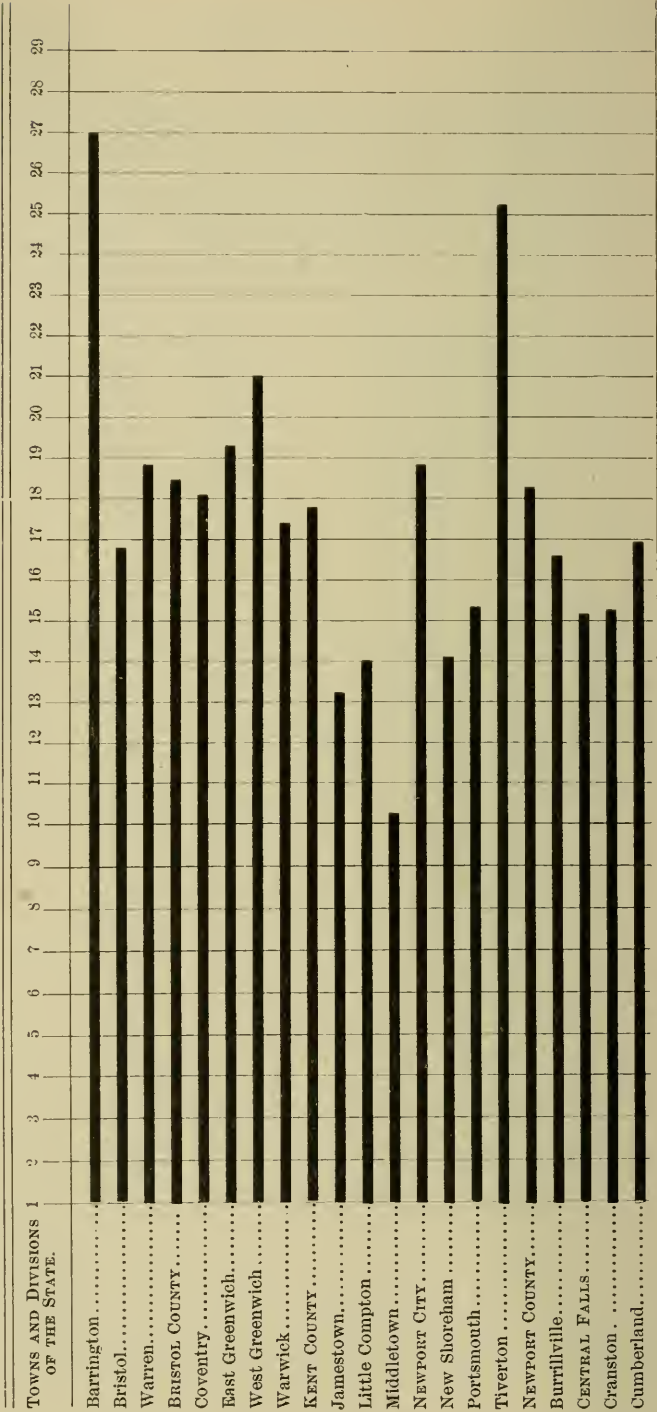
During the first ten years (1861-1870) there were 22 more deaths than births; during the second ten (1871-1880), 42 more births than deaths; during the third ten (1881-1890), 94 more births than deaths; and in the last ten (1891-1900), 138 more deaths than births. During 1901 the number of births was 5 less than the number of deaths, and in 1902 the number of births was 32 less than the number of deaths.



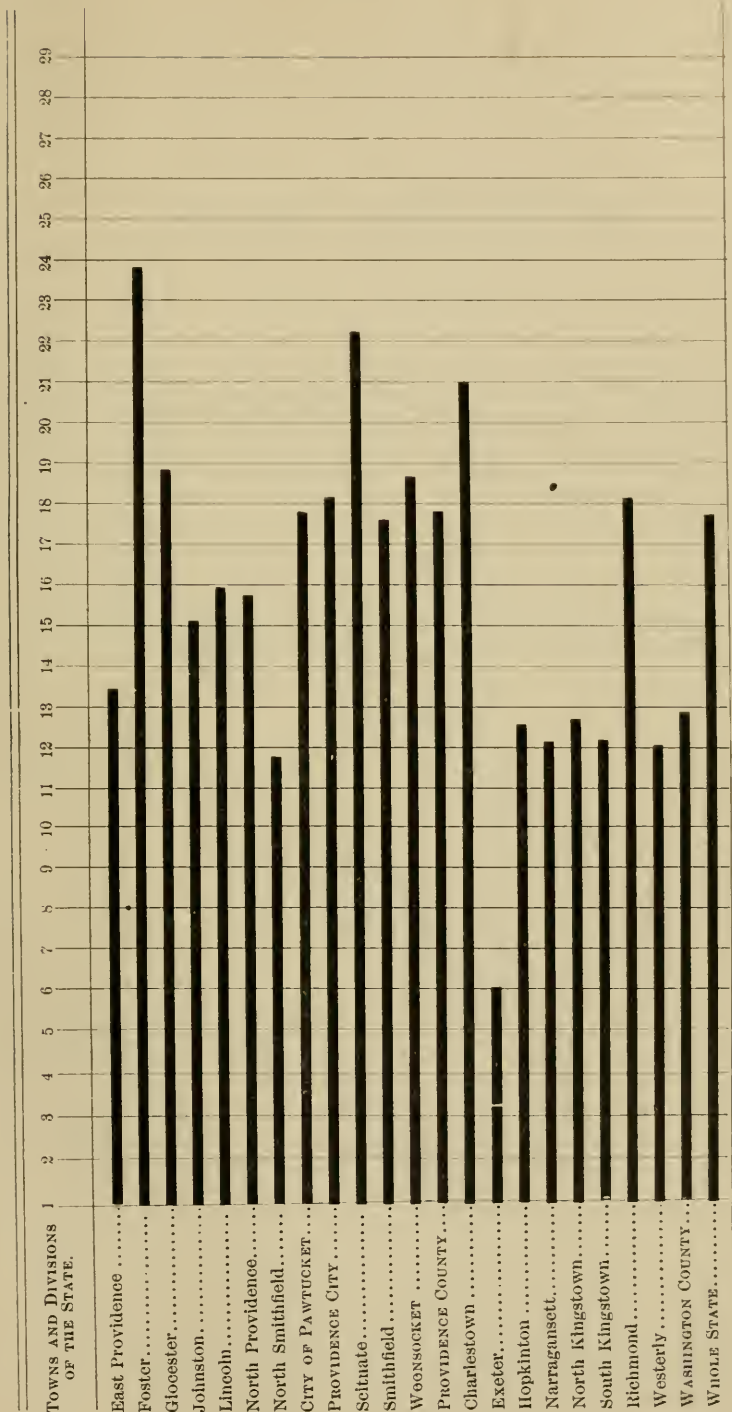
DEATH RATES.

Diagram II.—Showing the Number of Deaths in every 1,000 of the Population, in each Town and each County in the State, during the Year 1902, computed upon an estimated increase of the Population by the Census of 1902.

For explanation see foot-note on next page.







The figures at the top of the perpendicular lines indicate, in whole numbers, the number of births during the year in every 1,000 persons. The spaces are fractional parts of one. For instance, the heavy horizontal line against Barrington, at the top of this diagram, reaches across eight-tenths of the space between the perpendicular lines 26 and 27. It shows the death rate of Barrington, in 1902, was twenty-six and eight-tenths in every 1,000 of the population.



## CAUSES OF DEATH, 1902.

The statistics of the causes of death in Rhode Island, in 1902, may be found in Tables VII, VIII, IX, and X. The whole number of deaths, as previously stated, was 7,955, which was 11 less than the number returned in 1901, and 868 less than the number reported in 1900. The number of which the cause of death was reported was 7,896, and the number of which the cause was not stated was 59.

The following Table shows the number of deaths, in 1902, in each large division of the State, and the number and proportion in each division from which causes were reported unknown :

TABLE LVII.

	Bristol County.	Kent County.	Newport County Towns.	Providence County Towns.	Washington County.	Newport City.	Central Falls.	Pawtucket.	Providence City.	Woonsocket.	Whole State.
Number of deaths.....	250	545	184	424	1,276	287	737	546	3,394	312	7,955
Cause not stated.....	1	.....	6	.....	4	1	.....	5	41	1	59
One in.....	250	.....	31	.....	319	287	.....	109	83	312	135

TABLE LVIII.

*Proportion of Deaths reported with "Causes Unknown" in each Division of the State, for a period of forty-seven years, from 1856 to 1902, inclusive.*

YEARS.	STATE DIVISIONS.							In every 1,000 Deaths.
	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.	Whole State.	
1856-1860, One in every... ..	18.1	5.0	7.2	5.5	30.7	7.3	9.4	106.8
1861-1865, One in every.....	32.1	13.1	16.1	7.9	39.3	23.7	15.1	66.0
1866-1870, One in every.....	83.9	8.9	26.7	7.1	61.8	16.4	14.1	70.9
1871-1875, One in every.....	38.6	8.6	13.1	9.9	83.4	13.6	17.1	58.4
1876, One in every.....	11.5	7.9	18.5	9.9	124.3	22.8	19.3	45.8
1877, One in every.....	201.0	17.7	9.7	11.9	323.0	16.0	23.2	43.1
1878, One in every.....	32.1	7.4	9.0	13.7	124.2	21.7	21.1	47.4
1879, One in every.....	16.6	9.2	12.4	9.5	225.1	8.6	17.6	56.8
1880, One in every.....	21.9	23.5	13.5	10.5	122.3	17.8	20.7	48.3
1876-1880, One in every.....	31.9	17.2	19.9	18.1	39.6	26.9	25.2	39.7
1881, One in every.....	204.0	13.0	11.2	7.3	143.0	6.5	14.4	69.4
1882, One in every.....	37.6	11.6	10.9	10.6	187.0	7.7	18.8	53.2
1883, One in every.....	40.4	15.9	15.0	15.3	392.8	17.0	28.4	36.2
1884, One in every.....	100.0	40.0	81.6	91.7	372.1	90.4	122.4	8.2
1885, One in every.....	185.0	355.0	137.0	45.6	309.1	52.2	91.3	10.9
1881-1885, One in every.....	75.4	20.1	18.8	15.7	242.2	14.0	28.6	34.9
1886, One in every.....	110.5	192.5	86.0	87.0	195.1	55.2	113.7	7.3
1887, One in every.....	212.0	343.0	73.5	782.6	264.0	351.0	333.7	3.0
1888, One in every.....	251.0	408.0	152.7	164.3	293.8	368.0	235.7	4.3
1889, One in every.....	208.0	152.0	221.0	176.7	120.0	338.0	160.0	6.2
1890, One in every.....	.....	.....	236.0	109.0	190.0	159.0	161.0	6.2
1886-1890, One in every.....	576.0	413.0	125.1	154.8	189.0	171.2	177.6	5.6
1891, One in every.....	.....	.....	598.0	159.0	175.0	154.0	194.0	5.1
1892, One in every.....	.....	.....	591.0	240.0	212.0	184.0	264.0	3.8
1893, One in every.....	238.0	96.3	64.2	70.2	234.0	307.0	109.9	9.1
1894, One in every.....	.....	192.3	173.0	91.6	144.9	402.0	130.2	7.7
1895, One in every.....	.....	522.0	122.7	250.6	90.9	123.7	144.9	6.9
1891-1895, One in every.....	1,155.0	277.5	159.6	126.5	151.8	195.2	152.5	6.6
1896, One in every.....	.....	116.6	.....	707.5	155.6	382.0	258.8	3.9
1897, One in every.....	231.0	536.0	127.7	139.5	187.4	.....	284.4	3.5
1898, One in every.....	.....	172.0	164.6	596.2	366.1	184.5	345.2	2.9
1899, One in every.....	125.3	287.0	188.0	636.7	351.3	180.0	339.0	2.9
1900, One in every.....	297.0	354.0	305.0	281.0	282.9	109.8	267.3	3.7
1896-1900, One in every.....	302.8	224.4	225.9	500.1	242.8	213.3	293.0	3.4
1901, One in every.....	240.0	200.3	182.3	195.7	181.3	197.0	190.0	5.3
1902, One in every.....	250.0	.....	67.3	336.5	82.8	319.0	135.0	7.4

\* Not including Providence city.

TABLE LIX.

*Exhibiting the Order in regard to Number and Proportion of Decedents from Thirteen Principal Causes of Death.*

1902.	1901.	1900.	1899.	1898.	January 1st, 1888, to January 1st, 1897 — 10 years.	June 1st, 1852, to December 31st, 1887 — 35 years, 7 months.	Per 1,000 of Whole Number of Deaths, 55 years, 7 months.
Whole Number 7,955	Whole Number 7,966	Whole Number 8,823	Whole Number 7,458	Whole Number 6,905	Whole Number 70,552	Whole Number.....129,231	
Consumption.... 934	Consumption.... 990	Consumption.... 987	Consumption.... 972	Consumption.... 886	Consumption ... 7,767	Consumption.....19,847	154.3
Pneumonia..... 715	Pneumonia..... 742	Pneumonia..... 906	Pneumonia..... 686	Heart Diseases.. 549	Pneumonia..... 6,213	Pneumonia..... 8,298	64.5
Heart Diseases.. 704	Heart Diseases.. 685	Heart Diseases.. 701	Heart Diseases.. 648	Pneumonia..... 542	Cholera Inf'm... 5,193	Cholera Infantum..... 6,821	53.1
* Cholera Inf'm.. 611	Kidney Diseases. 505	Cholera Inf'm... 537	Kidney Diseases. 477	Kidney Diseases. 471	Heart Diseases. 4,959	Heart Diseases of..... 6,797	53.0
Kidney Diseases. 535	Apoplexy, etc... 499	Kidney Diseases. 516	Cholera Inf'm... 473	Cholera Inf'm.... 468	Apoplexy . .... 3,885	Heart Diseases of..... 5,612	43.6
Apoplexy..... 476	Cholera Inf'm... 401	Apoplexy..... 506	Apoplexy..... 457	Apoplexy..... 416	Kidney Diseases. 2,893	Dysentery and Diarrhoea 5,166	40.1
Cancer..... 341	Accidents..... 346	Accidents..... 336	Cancer..... 292	Brain Diseases... 327	Bronchitis ..... 2,663	Apoplexy and Paralysis. 5,050	39.2
Accidents..... 317	Enteritis..... 343	Accidents..... 295	Accidents..... 276	Accidents..... 296	Accidents..... 2,548	Scarlet Fever..... 4,974	38.5
Brain Diseases.. 268	Cancer..... 306	Brain Diseases... 292	Brain Diseases... 267	Cancer..... 279	Brain Diseases.. 2,449	Fever, Typhoid, etc.... 4,632	36.1
Old Age..... 251	Brain Diseases.. 281	Brain Diseases... 296	Bronchitis..... 211	Bronchitis..... 236	Old Age..... 2,088	Accidents, all kinds..... 3,921	30.3
Bronchitis..... 239	Old Age..... 234	Influenza..... 255	Old Age..... 228	Enteritis . .... 233	Cancer..... 2,038	Diphtheria†..... 3,777	29.2
Diphtheria..... 148	Bronchitis..... 232	Old Age..... 250	Influenza..... 219	Old Age..... 205	Diphtheria..... 1,921	Convulsions ..... 2,859	22.1
Enteritis..... 146	Diphtheria..... 177	Enteritis..... 233	Enteritis..... 212	Diphtheria..... 93	Fever, Typhoid. 1,345	Croup ..... 2,461	19.1

\* Includes Enteritis under 2 years of age.

† 36 years, 1858 to 1887, inclusive.

The number of deaths from consumption, in 1902, was 56 less than in 1901.

From pneumonia there was a decrease of 27 deaths from that of the previous year. The fatality from pneumonia, however, has been slowly increasing, in proportion to whole number of deaths, for the last twenty years.

From diseases of the heart there was an increase of 19 deaths from 1901. Diseases of the heart have been steadily increasing as causes of death, the mortality in 1902 being the largest ever recorded in this State.

From kidney diseases there was an increase of 30 from the number in 1901.

There were 341 deaths from cancer in 1902, an increase of 35 over the number in 1901.



## COMPARATIVE STATISTICS AND COMMENTS.

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There have been presented in the preceding pages, numerically and in tabular form, the different causes of death in Rhode Island, in 1902, with various summaries and illustrations. In Tables VII and VIII they were presented at considerable length, in various specific terms; in Table IX more or less grouped in a general nosological arrangement; and in Table X the same for a period of fifty years.

In Table VII the number of deaths from *each cause* and of *each sex* is shown, for *each month* in the year, and the *nativity* and *parentage* of the decedents from *each cause* during the year.

In Table VIII the number of decedents of *each sex*, from *each cause*, in the *different periods of life*, is given.

In Table IX, with the Bertillon classification and percentage of causes of death, the number of each general cause, in each division of larger population, is given.

In Table X a nosological summary of causes of death for the whole State, in each of fifty years, is given, arranged by the Bertillon system.

Table LX is a compend, in part, of Tables VII, VIII, and IX, previously alluded to, and contains the particulars of the most important causes of death in 1902, and comprises the principal causes which will be commented upon in the following pages:

TABLE LX.

*Deaths in Rhode Island from Twenty-six Principal Causes.*

	Accidents.	Apoplexy.	Appendicitis.	Brain Diseases.	Bronchitis.	Cancer.	Cholera Infantum.*	Croup.	Diabetes.	Diphtheria.	Dysentery.	Enteritis.	Heart Diseases.	Influenza.	Kidney Diseases.	Liver Diseases.	Measles.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Scarlet Fever.	Stomach Diseases.	Typhoid Fever.	Whooping Cough.	
TOTAL MORTALITY .....	317	476	51	268	259	341	611	934	18	51	148	121	146	704	37	535	112	25	261	18	715	47	30	155	91	85
SEX .....																										
{ Males.....	244	212	34	134	117	124	333	475	8	22	64	58	61	363	17	290	54	17	100	11	378	26	16	72	52	28
{ Females.....	73	264	17	134	142	217	278	459	10	29	84	63	85	341	20	245	58	8	161	7	337	21	14	83	39	57
PARENTAGE .....																										
{ Native.....	121	244	22	109	86	179	199	283	5	29	55	39	65	323	17	230	54	5	148	5	279	22	10	65	29	41
{ Foreign.....	196	232	29	159	173	162	412	651	13	22	93	82	81	381	20	305	58	20	113	13	436	25	20	90	62	44
SEASON.....																										
{ January.....	28	36	2	25	25	27	11	107	1	6	20	1	7	69	4	44	11	9	27	3	60	2	2	11	4	4
{ February.....	16	38	3	21	31	36	9	78	4	5	14	2	8	46	3	39	8	2	27	3	116	7	1	15	8	5
{ March.....	21	34	6	25	29	29	9	78	1	3	7	...	6	69	11	51	8	2	22	4	91	4	4	13	3	3
{ April.....	18	43	4	29	26	30	7	89	2	7	13	3	7	56	8	44	8	2	18	2	78	5	2	12	5	5
{ May.....	30	50	3	23	26	39	16	99	1	2	8	1	8	65	3	46	8	2	17	1	53	5	3	8	7	2
{ June.....	29	42	5	22	9	29	32	72	1	11	6	3	8	54	1	47	9	1	18	1	33	2	2	12	5	...
{ July.....	38	45	5	20	5	20	150	65	2	2	5	24	22	52	...	34	10	1	27	...	23	9	1	10	5	6
{ August.....	33	36	10	24	8	25	174	63	...	3	6	38	30	58	...	44	9	...	20	...	19	5	3	13	3	19
{ September.....	24	35	4	19	10	25	110	68	1	3	14	28	29	58	...	42	17	...	20	...	16	1	1	9	10	6
{ October.....	21	30	...	17	19	27	68	74	...	1	12	16	10	62	...	43	7	2	13	2	45	2	3	21	18	6
{ November.....	20	31	5	23	21	27	17	61	2	5	25	2	7	56	1	52	10	1	24	...	61	2	1	12	11	11
{ December.....	39	56	4	20	50	27	8	80	3	3	18	3	4	65	6	49	7	3	28	1	120	3	4	19	12	18

\* Includes Diarrheal Diseases under 2 years.

TABLE LX.—Concluded.

	Accidents.	Apoplexy.	Appendicitis.	Brain Diseases.	Bronchitis.	Cancer.	Cholera Infantum.*	Croup.	Diabetes.	Diphtheria.	Dysentery.	Enteritis.	Heart Diseases.	Influenza.	Kidney Diseases.	Liver Diseases.	Measles.	Old Age.	Pleurisy.	Pneumonia.	Rheumatism.	Scarlet Fever.	Stomach Diseases.	Typhoid Fever.	Whooping Cough.		
AGES.....	Under 5 years.....	33	6	167	155	...	611	97	17	...	97	54	36	3	9	19	...	22	...	3	285	1	17	78	1	84	
	5 to 10 years.....	18	1	5	18	3	...	13	1	1	35	12	2	2	1	2	2	3	...	2	16	3	8	3	5	...	
	10 to 15 years.....	20	1	5	9	1	...	19	...	2	7	1	7	10	...	7	...	...	...	8	5	2	...	4	...		
	15 to 20 years.....	16	...	6	5	2	...	70	...	...	2	...	2	10	1	14	...	...	...	1	20	5	...	9	...		
	20 to 30 years.....	45	4	17	9	3	5	253	...	3	5	4	5	37	...	42	8	...	...	1	35	2	3	4	31		
	30 to 40 years.....	42	14	7	9	2	20	211	...	1	1	8	6	51	1	56	6	...	...	1	42	6	...	9	19		
	40 to 50 years.....	38	43	2	12	2	53	124	...	5	1	5	4	77	1	64	21	...	...	2	51	3	...	11	...		
	50 to 60 years.....	38	81	6	11	14	81	79	10	...	6	15	127	3	115	26	...	...	2	67	4	...	13	3	...		
	60 to 70 years.....	33	115	2	10	26	101	48	21	...	16	21	161	5	86	23	...	4	...	4	75	13	...	14	4	...	
	70 to 80 years.....	20	142	1	14	31	60	13	...	6	...	8	20	144	9	97	20	105	...	1	84	2	...	17	3	...	
LOCALITIES.	80 years and over.....	12	69	...	4	22	19	6	2	...	7	18	79	7	33	6	152	...	1	31	3	...	10	...	1	...	
	Not stated.....	2	...	...	...	...	...	1	...	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...	1	...	
	Bristol County.....	8	17	1	6	7	12	24	...	4	1	4	25	3	27	2	...	1	9	...	23	1	...	2	...	...	
	Kent County.....	14	37	...	26	17	19	67	43	2	7	9	6	16	48	2	29	3	...	25	2	45	1	6	10	5	
LOCALITIES.	Newport County Towns.....	7	15	4	7	2	12	26	10	1	1	5	...	4	13	1	2	3	1	10	...	7	...	1	5	4	...
	Newport City.....	19	30	3	18	4	15	24	45	...	5	7	3	5	46	...	24	4	...	32	1	38	4	5	...	8	3
	Providence County Towns.....	51	89	3	50	41	56	68	152	...	8	22	20	32	116	7	101	21	7	35	2	114	9	3	20	11	11
	Central Falls.....	9	12	...	15	20	6	38	26	1	...	6	4	6	21	1	14	2	3	6	1	24	1	4	8	1	...
	Pawtucket.....	17	50	6	38	25	32	52	76	1	6	12	4	11	75	10	46	13	5	46	2	59	4	2	26	10	1
	Providence City.....	161	176	32	80	113	147	236	461	4	19	69	61	55	281	12	243	50	7	78	9	324	21	9	71	38	13
	Woonsocket.....	16	24	2	23	19	14	72	71	9	1	12	20	7	29	...	33	5	1	7	...	51	4	...	6	1	2
	Washington County.....	15	26	...	5	11	27	4	23	...	4	2	6	50	1	16	9	...	13	1	30	2	...	7	4	1	...

\* Includes Diarrhoeal Diseases under 2 years.

## DEATHS FROM ACCIDENTS.

The number of deaths from accidental causes in Rhode Island, in 1902, was 317.

Among the deaths from accidents there were 27 from asphyxia; 1 by bicycle; 34 by burns and scalds; 47 by drowning; 10 by electric car; 3 by electrical shocks; 4 by elevator; 1 by explosion of dynamite; 5 by exposure to cold and storm; 74 by falls; 2 by firearms; 3 by insolation; 7 by machinery; 9 by poison; 45 by railroad; and 45 by various other accidents.

*Asphyxia.*—By bedclothes or overlaying, 5 (infants); by illuminating gas (in one instance due to defective piping) 12, (adults); by escaping gasoline, 1 (adult); by gas from coal stove, 1 (adult); by smoke in burning house, 4 (ages 1, 50, 60, 74 years); by button in larynx, 1 (infant); by food in trachea, 1 (adult); by lying face downward while intoxicated, 1; by chloroform given for operation, 1 (adult). Total 27.

*Bicycle.*—Knocked down by bicycle, 1 (age 80 years).

*Burns and Scalds.*—By bonfire, 6 (5 children and 1 adult); playing with matches, 5; by clothes taking fire from stove, 2 (child and adult); explosion of kerosene lamp, 3 (ages 6, 59, and 74 years); explosion of naphtha tank in automobile, 1 (age 17 years); clothes caught fire from burning paper used to thaw water pipes, 1 (adult); from lighted pipe, 1 (invalid); in burning buildings, 3 (1 infant and 2 adults); by burning cradle which caught fire from stove, 1 (infant); by hot lead, 1 (adult); in some manner unknown, 1 (adult); scalded by hot water, 6 (1, 2, 36, 59, 57, 67 years); by hot soup during fight, 1 (adult); by steam from burst economizer at power house, 1 (adult); by falling into dye vat, 1 (adult). Total 34.

*Drowning.*—While bathing or swimming, 6 (ages 14, 15, 16, 16, 18, and 37 years); through ice, 6 (ages 4, 7, 8, 10, and 2 at 11 years); by falling overboard from small boats, 4 (ages 13, 21, 28, 29 years); by capsized rowboats, 4 (adults); by an overturned canoe, 3 (adults); by falling from railroad bridge into water, 2 (adults); into canal while intoxicated, 1; while trying to save boy, 1 (adult); into cistern, 1 (age 3 years); from rafts or planks while playing, 4 (children); found in water, circumstances unknown, 15, Total 47.

*Electric Car.*—Of the persons who were killed by electric cars, 4 jumped or fell from moving cars; 1 while riding bicycle was

struck by car ; 2 were walking on or crossing tracks ; and 3 in collision of cars with teams. Total 10.

*Electrical Shock.*—From incandescent light while turning on electric light in house during thunder-storm, 1 (adult) ; by grasping overhead wires under railroad bridge, 1 (age 10 years) ; from live wire, 1 (a lineman). Total 3.

*Elevator.*—Crushed by being caught between elevator and floor, 3 (in each case the deceased, through whose carelessness or misfortune the accident occurred, was operating the elevator) ; by falling into well, 1. Total, 4 (adults).

*Explosion of Dynamite.*—Premature explosion of stick dynamite used in blasting, 1 (a quarryman).

*Exposure to Cold and Storm.*—5 (ages 33, 46, 61, 65, 70 years).

*Falls.*—Downstairs or steps, 11 (ages 18, 23, 36, 40, 45, 45, 52, 70, 74, 75, 76 years) ; from building or staging, 10 (1 child and 9 adults) ; from ladder, 2 (adults) ; from hay-loft in barn, 3 (ages 41, 43, 48 years) ; from load of hay, 1 (age 82 years) ; from fence, 1 (age 76 years) ; from tree, 2 (ages 40 and 60 years) ; from window, 5 (ages 1, 2, 75, 78, 92 years) ; through scuttle in barn to floor, 1 (age 44 years) ; from team, while intoxicated, 2 ; from chimney, 1 (a painter) ; from bed, 3 (ages 4 months, 1 year, 70 years) ; from bridge, 1 (age 8 years) ; from bank-wall to roadway, 1 (age 69 years) ; down river bank, breaking neck, 1 (age 2 years) ; from forehatch to keelson on vessel, 1 (age 46 years) ; from shelf in harness room, where he fell asleep, 1 (adult) ; across circular saw, lacerating abdomen, 1 (adult) ; on floor, ground, or sidewalk, 26 (of these 16 were over 60 years of age). Total 74.

*Firearms.*—One, a boy 11 years of age, was accidentally shot by playmate while playing with a rifle ; another, 16 years of age, was accidentally shot by his brother while shooting at a target. Total 2.

*Insolation.*—3 (ages 1, 11, 47 years).

*Machinery.*—Caught in belting or shafting, 6 (ages 13, 13, 20, 22, 22, 43 years) ; struck by flying piece of machinery, 1 (adult). Total 7.

*Poison.*—Taken by mistake, carbolic acid, cyanide of potassium, oleum gaultheria, corrosive sublimate, "Columbian" spirit, by adults as medicine or beverage ; strychnia tablets mistaken by



child for candy; by eating lettuce grown under tree which had been sprayed with arsenic (child 8 years of age); by alcohol (child 2 years of age drank liquor out of bottle); and ptomaine poisoning caused by decomposed milk and clam-chowder (child 8 years of age). Total 9.

*Railroad.*—Of the 11 employees who were killed, 6 fell from moving cars; 1 fell while attempting to board moving train; 1 was coupling cars; 1 working on bridge, fell, and was struck by train; 1 patrolling track on railroad velocipede was struck by train; 1 laborer, working on track, was struck by engine. Of the remainder, 32 persons classed as trespassers were killed, 16 of whom were walking on the tracks, 7 attempting to cross tracks; 7 stealing rides on freight cars and 2 asleep on or beside tracks; 1, a teamster, fell from flat car, and 1, a laborer, was killed by being crushed between coal cars at State Institutions. Total 45.

*Accidents, Various.*—Thrown from carriage or wagon, 8 (adults); run over by heavy teams, 3 (children); kicked by horse, 3 (adults); fracture of leg while riding steeple chase, 1; struck by falling timber, 3 (adults); struck by falling derrick, 3 (adults—2 in one accident); crushed under load of falling logs, 1 (adult); by clay bank, 1; by falling bridgework, 1; falling lumber, 1; by heavy stone, 1; by falling floor in mill, 1 (adult); in collision of boats on steamer Priscilla, 1; from slight injuries to hand, septicemia resulting, 3 (adults); thumb crushed while hauling lumber, tetanus resulting, 1; hand caught on painter's hook, tetanus resulting, 1; explosion of giant firecracker, 1 (age 10 years); abrasion of corn on foot, septicemia resulting, 1; struck head against marble-top table, 1 (age 13 years); blow on abdomen by elbow of man's arm, man pulling on rope against deceased, 1; struck by locomotive while working in ash pit, 1; by swallowing needles or pins, 3 (ages 1, 7, and 20 years); fractured vertebræ and injury to spinal cord, manner unknown, 1; fractured skull, concussion of brain, manner unknown, 3. Total 45.

Comparison of the number of deaths from street-car accidents during the last five years presents the following figures:

	Struck by cars.	Collision of cars.	Otherwise.	Total.
1897.....	4.....	1.....	2.....	7
1898.....	6.....	0.....	1.....	7
1899.....	3.....	1.....	1.....	5
1900.....	8.....	6.....	5.....	19
1901.....	7.....	1.....	3.....	11
1902.....	3.....	0.....	7.....	10



As a result of inattention on the part of those having the care of children, 2 fell into hot water, the clothing of 2 others caught fire from stove, and 10 children received burns which caused death as the result of playing with bonfires or matches.

It is interesting to note the large number of cases resulting from fractures of the long bones as the sequence of a slight fall. This is especially noticeable in fractures of the hip in old people. Out of the 74 who died from the result of falls, 30 were over 60 years of age; and of these 30, 13 sustained fractures of hip.

Of the whole number of deaths by accidents, 244 were males and 73 were females; 121 were of native and 196 were of foreign parentage, or 38.2 per cent. of native to 61.8 per cent. of foreign.

Of the sexes, the proportion was 77.0 per cent. of male decedents to 23.0 of female decedents.

In regard to the periods of life, the decedents from accidental causes were divided as follows: under 5 years, 33; 5 and under 10, 18; between 10 and 20, 36; between 20 and 40, 87; between 40 and 60, 76; over 60, 65; and not stated, 2.

In regard to sectional divisions of the State, 8 of the deaths from accidental causes were in Bristol county; 14 in Kent county; 26 in Newport county; 254 in Providence county; and 15 in Washington county.

The whole number of deaths from accidental causes, in 1902, *in proportion to the whole number of deaths* in the State, was 39.9 in every one thousand. The number in proportion to the whole *population* was .71 in every one thousand.

The number of deaths by accidents in each division of the year was as follows:

First Quarter.....	65	Third Quarter.....	95
Second Quarter.....	77	Fourth Quarter.....	80
First half.....	142	Second half.....	175
Whole year.....		317	

In the following Table may be found the number, sex, parentage, and locality of mortality from accidents, for thirty-seven years, ending December 31, 1902.

TABLE LXI.

*Mortality in the State from Accidents, with the Percentage of the Whole Number of Deaths; Sex, Parentage, and Locality for thirty-seven years, from 1866 to 1902, inclusive, in three periods of five years each, and for each of the last twenty-two years.*

YEARS.	Whole Number.	VARIETIES.								Per cent.	SEX.		PARENT-AGE.		STATE DIVISIONS.					
		Burns and Scalds.	Drowning.	Falls.	Fractures and Con- fusions.	Poisoning.	Railroad.	Suffocation.	Various and Un- specified.		Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County*.	Providence City.	Washington County.
5 years, 1866-1870.	490	77	124	89	....	14	43	....	143	2.18	375	115	238	252	22	34	46	187	162	39
5 years, 1871-1875.	610	78	164	90	....	21	71	....	186	2.97	493	117	283	327	26	46	50	200	240	48
5 years, 1876-1880.	607	75	166	69	....	28	58	14	197	2.72	450	157	249	358	17	53	47	178	281	31
1881.....	155	16	29	19	....	9	20	19	43	3.09	107	48	62	93	5	17	12	60	56	5
1882.....	178	17	40	31	....	6	16	8	60	3.50	130	48	72	106	5	9	15	60	80	9
1883.....	153	18	27	21	....	6	16	12	53	2.83	117	36	61	92	4	8	9	63	66	3
1884.....	197	20	41	31	....	7	16	11	71	3.82	147	50	90	107	5	19	14	65	76	18
1885.....	173	19	42	25	....	9	15	9	54	3.20	135	38	72	101	5	6	8	58	83	13
1881-1885.	856	90	179	127	....	37	83	59	281	3.26	636	220	357	499	24	59	58	306	361	48
1886.....	190	23	58	19	....	6	20	9	55	3.25	141	49	84	106	16	11	16	62	72	13
1887.....	206	17	39	17	23	7	24	14	65	3.24	158	48	92	114	5	11	23	81	71	15
1888.....	190	27	46	18	8	12	25	8	46	2.87	145	45	63	127	4	6	14	70	88	8
1889.....	216	20	52	31	25	7	23	9	49	4.10	146	70	88	128	2	14	13	73	101	13
1890.....	250	20	71	32	26	11	31	12	47	3.60	199	51	99	151	7	17	24	75	111	16
1886-1890.	1052	107	266	117	82	43	123	52	262	3.29	789	263	426	626	34	59	90	361	443	65
1891.....	233	18	52	21	29	16	30	17	50	3.54	174	59	78	155	5	18	16	95	89	10
1892.....	309	21	48	33	60	20	29	8	90	4.18	225	84	115	194	8	13	21	100	158	9
1893.....	264	26	47	25	25	14	39	14	74	3.55	195	69	88	176	9	21	21	75	126	12
1894.....	234	28	52	29	20	8	36	21	40	3.27	189	45	74	160	6	24	18	88	81	17
1895.....	293	28	61	57	2	8	36	26	75	3.89	233	60	88	205	6	23	13	85	141	25
1891-1895.	1333	121	260	165	136	66	170	86	329	3.69	1016	317	443	890	34	99	89	443	595	73
1896.....	296	25	39	48	....	8	36	24	116	3.94	226	70	101	195	6	25	24	85	139	17
1897.....	263	41	40	64	....	7	24	22	65	3.70	197	66	94	169	12	15	22	87	115	12
1898.....	296	21	60	58	..	8	30	19	100	4.29	233	63	111	185	11	18	26	85	134	22
1899.....	276	28	45	61	....	7	38	31	66	3.70	217	59	109	167	9	16	30	82	125	14
1900.....	336	33	64	72	....	16	26	29	96	3.81	254	82	110	226	15	30	12	101	159	19
1896-1900.	1467	148	248	303	....	46	154	125	443	3.88	1127	340	525	942	53	104	114	440	672	84
1901.....	346	36	57	60	18	6	33	33	103	4.34	267	79	123	223	12	21	18	102	175	18
1902.....	317	34	47	74	15	9	45	27	66	3.98	244	73	121	196	8	14	26	93	161	15
Total, 37 years	7078	766	1511	1094	231	270	780	396	2010	3.44	5397	1681	2765	4313	230	489	538	2310	3090	421

\* Exclusive of Providence city.

TABLE LXII.

*Mortality in the State from Alcoholism, with the Percentage of the Whole Number of Deaths, Sex, Parentage, and Locality, for thirty-seven years, from 1866 to 1902, inclusive.*

YEARS.	Number of Deaths from Alcoholism.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	62	.40	53	9	32	30	5	6	6	18	25	2
5 years, 1871-1875..	93	.45	73	20	37	56	2	6	9	25	48	3
5 years, 1876-1880..	79	.35	52	27	25	54	2	4	6	18	45	4
1881.....	24	.51	17	7	5	19	1	.....	1	7	14	1
1882.....	28	.58	16	12	8	20	.....	.....	.....	9	18	1
1883.....	20	.54	17	12	7	22	.....	1	1	10	16	1
1884.....	27	.53	19	8	10	17	.....	1	4	9	12	1
1885.....	22	.41	16	6	6	16	2	1	.....	11	7	1
1881-1885. ....	130	.50	85	45	36	94	3	3	6	46	67	5
1886.....	12	.20	9	3	2	10	1	.....	1	3	7	....
1887.....	16	.25	14	2	4	12	2	2	2	5	4	1
1888.....	16	.32	10	6	5	11	.....	.....	2	5	9	....
1889.....	31	.50	23	8	12	19	2	1	1	13	14	....
1890.....	25	.37	20	5	8	17	2	.....	.....	11	11	1
1886-1890 .....	100	.31	76	24	31	69	7	3	6	37	45	2
1891.....	29	.47	22	7	8	21	1	1	4	10	13	....
1892.....	36	.48	27	9	8	28	1	.....	4	12	17	2
1893.....	44	.59	34	10	15	29	.....	3	7	9	23	2
1894.....	39	.54	33	6	12	27	1	4	2	14	16	2
1895.....	24	.32	19	5	5	19	.....	.....	.....	10	13	1
1891-1895.....	172	.48	135	37	48	124	3	8	17	55	82	7
1896.....	24	.45	28	6	7	27	1	2	6	10	14	1
1897.....	36	.51	26	10	10	26	.....	1	5	11	15	4
1898.....	45	.65	37	8	13	32	.....	3	3	13	22	4
1899.....	34	.45	26	8	9	25	1	3	4	9	16	1
1900.....	62	.70	47	15	12	50	1	2	3	12	42	2
1896-1900.....	211	.56	164	47	51	160	3	11	21	55	109	12
1901.....	40	.50	35	5	13	27	2	2	3	15	17	1
1902.....	39	.49	36	3	10	29	.....	2	3	15	18	1
Total, 37 years.....	926	.45	709	217	283	643	27	45	77	284	456	37

## APOPLEXY AND PARALYSIS.

There were 476 deaths from apoplexy and paralysis in Rhode Island, in 1902, according to the returns. The number reported is 23 less than in the year 1901.

The whole number of deaths from these two causes represents 5.98 per cent. of *all causes*, and a proportion of 1.06 to every one thousand of the population.

Of the sexes, there were 212 males and 264 females.

Of parentage, 244 were of native parentage, and 232 of foreign.

As observed in previous reports, the older native population has steadily been, in a very large proportion, more prone to apoplexy than the foreign, or the children of the foreign, population.

It will be observed that the proportion of deaths from apoplexy and paralysis, to the whole mortality from all causes, has steadily increased from about three and three-quarters per cent., during the first quinquennial (1866-1870), to six per cent. during the quinquennial 1896-1900.

The following Table will present the sex, parental, and local relations of apoplexy and paralysis, as causes of death, during the last thirty-seven years (Providence city not included in the Providence county statement):

## TABLE LXIII.

*Mortality in the State from Apoplexy and Paralysis, 1866 to 1902, inclusive.*

YEARS.	Total Deaths for Year.	Number from Apoplexy and Paralysis.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
				Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870...	15,391	574	3.73	284	290	464	110	52	43	77	145	234	33
1871.....	3,344	156	4.66	73	83	113	43	10	17	15	40	61	13
1872.....	4,247	125	2.97	62	63	96	29	17	9	10	27	52	10
1873.....	4,403	134	3.04	59	75	109	25	9	8	17	26	57	17
1874.....	4,229	156	3.69	84	72	120	36	14	10	16	42	59	15
1875.....	4,317	166	3.61	79	87	133	33	7	13	17	46	75	8
1871-1875...	20,540	737	3.59	357	380	571	166	57	57	75	181	304	63
1876.....	4,116	165	4.01	79	86	130	35	13	11	13	45	68	15
1877.....	4,450	181	4.07	87	94	123	58	10	10	16	52	74	19
1878.....	4,441	188	4.23	104	84	145	43	12	16	21	58	66	15
1879.....	4,472	220	4.92	114	106	146	74	12	9	29	71	89	10
1880.....	4,829	215	4.67	109	106	157	58	18	13	22	71	78	13
1876-1880...	22,308	969	4.77	493	476	701	268	65	59	101	297	375	72
1881.....	5,016	244	4.86	116	128	170	74	17	15	25	70	101	16
1882.....	5,074	265	5.22	139	126	168	97	15	29	24	65	117	15
1883.....	5,282	275	5.22	138	137	192	83	11	28	22	75	118	21
1884.....	5,141	298	5.80	135	163	176	122	21	14	28	108	105	22
1885.....	5,389	289	5.38	144	145	183	106	16	18	28	99	110	18
1881-1885...	25,902	1,371	5.29	672	699	889	482	80	104	127	417	651	92
1886.....	5,849	333	5.70	173	160	230	103	11	27	32	108	120	35
1887.....	6,340	328	5.17	161	167	213	115	21	27	23	101	128	28
1888.....	6,594	367	5.41	164	203	234	133	29	26	29	113	137	33
1889.....	6,259	323	5.17	140	183	205	119	23	32	28	101	106	33
1890.....	6,934	341	4.91	168	173	206	135	21	21	23	110	144	22
1886-1890...	31,976	1,692	5.29	806	886	1,087	605	105	133	135	533	635	151
1891.....	6,620	335	5.08	160	175	207	128	17	29	32	118	118	21
1892.....	7,396	362	4.29	176	186	195	167	12	29	39	124	134	24
1893.....	7,440	407	5.47	206	201	227	180	21	28	26	138	171	23
1894.....	7,160	445	6.22	231	214	243	202	19	33	40	155	165	33
1895.....	7,535	417	5.53	199	218	238	179	18	29	30	150	153	37
1891-1895...	36,151	1,966	5.71	972	994	1,110	856	87	148	167	685	741	138
1896.....	7,504	419	5.58	199	220	235	184	20	30	42	146	141	40
1897.....	7,110	469	6.70	229	240	263	206	13	33	40	175	184	24
1898.....	6,905	416	6.02	203	213	245	171	17	30	48	136	152	33
1899.....	7,458	457	6.13	210	247	230	227	19	32	36	154	179	37
1900.....	8,823	506	5.74	248	258	275	231	18	38	49	173	189	37
1896-1900...	37,800	2,267	6.00	1,089	1,178	1,248	1,019	87	163	215	786	845	171
1901.....	7,966	499	6.27	223	276	253	246	26	45	51	155	181	41
1902.....	7,955	476	5.98	212	264	244	232	17	37	45	175	176	26

\* Not including Providence city.



TABLE LXIV.

*Ages of Decedents from Apoplexy and Paralysis, in each of the last thirty-seven years.*

YEARS.	PERIODS OF LIFE.								
	Under 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 and over.	Not stated.
1866.....	1	1	7	16	9	24	27	7	.....
1867.....	2	.....	6	6	15	38	40	17	.....
1868.....	2	3	3	11	16	27	31	16	2
1869.....	1	1	5	12	20	28	34	15	1
1870.....	4	1	10	9	12	33	41	20	.....
1871.....	3	4	7	14	21	46	45	15	1
1872.....	1	4	5	17	20	26	41	11	.....
1873....	2	3	4	14	22	35	37	16	1
1874 ...	1	2	9	9	30	39	40	25	1
1875.....	6	2	8	19	23	40	45	22	1
1876 .....	4	4	4	13	25	43	49	23	.....
1877.....	1	2	9	12	24	50	61	22	.....
1878.....	4	2	7	14	41	40	53	26	1
1879.....	4	6	11	18	27	57	59	38	.....
1880.....	1	2	8	18	21	59	70	34	2
1881.....	1	7	11	20	36	55	70	42	2
1882.....	4	5	14	28	41	57	77	38	1
1883 .....	8	4	11	19	45	56	83	49	.....
1884.....	10	7	16	21	32	68	95	45	4
1885 .....	8	5	7	25	29	76	94	44	1
1886 .....	7	8	10	25	52	65	112	51	3
1887.....	12	6	13	26	50	90	96	35	.....
1888.....	10	4	18	29	61	85	100	60	.....
1889.....	6	6	11	36	45	87	92	39	1
1890.....	7	5	13	29	52	84	100	50	1
1891.....	4	6	15	24	61	88	90	47	.....
1892.....	3	6	17	40	60	91	95	49	1
1893.....	13	6	19	45	62	110	108	43	1
1894.....	12	5	16	39	88	108	111	65	1
1895.....	6	2	24	39	76	101	106	63	.....
1896.....	1	7	17	34	76	118	110	55	1
1897.....	3	3	12	37	77	136	144	57	.....
1898 .....	3	8	12	37	75	108	117	54	2
1899.....	5	6	21	34	73	118	118	81	1
1900.....	6	5	19	42	97	134	131	71	1
1901.....	8	4	11	32	96	133	137	78	.....
1902.....	8	4	14	43	81	115	142	69	.....
Total.....	182	156	424	906	1,691	2,668	3,001	1,492	31



## APPENDICITIS.

From a greater perfection in diagnosis of disease of the abdominal viscera, the disease known as appendicitis has received greater attention. This was probably reported in previous years under the head of diseases of the bowels, intussusception, or peritonitis.

During 1902, there were 51 deaths from appendicitis reported, and of this number operations were performed in 37 cases.

As there were 16 deaths from peritonitis in 1902, this would represent seventy-six per cent. of the combined numbers.

Of the 51 cases of appendicitis, 34 were males, and 17 were females; 22 were of native and 29 of foreign parentage.

## BRAIN DISEASES.

The number of decedents from diseases of the brain proper, in 1902, was 268.

This number represents 3.37 per cent. of *all causes*, and a proportion of .60 to every one thousand of the whole *population*.

Of the 268 decedents, 134 were males and 134 were females.

In regard to parentage, 109 were of native and 159 of foreign parentage.

The deaths in the different seasons of the year were as follows :

First Quarter.....	71	Third Quarter.....	63
Second Quarter.....	74	Fourth Quarter.....	60
<hr/>		<hr/>	
First half .....	145	Second half.....	123
<hr/>		<hr/>	
Whole year.....		268	

Brain diseases occur largely in children. Of the 268 decedents from those causes, in 1902, 167 were under five years of age, and 18 were from five to ten years of age.

The following Table will present the statistics of mortality from diseases of the brain, for thirty-seven years :

## TABLE LXV.

*Mortality in the State from Brain Diseases, with the Percentage, Sex, Parentage, and Locality, for thirty-seven years, from 1866 to 1902, inclusive.*

YEARS.	Number of Deaths from Brain Diseases.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	465	3.02	249	216	274	191	21	24	34	139	222	25
1871-1875.....	607	2.95	331	276	358	249	12	32	39	167	337	20
1876.....	150	3.64	92	58	89	61	3	11	7	39	85	5
1877.....	160	3.59	88	72	91	69	3	7	11	49	85	5
1878.....	142	3.19	75	67	76	66	1	13	12	45	68	3
1879.....	163	3.65	82	81	88	75	3	13	15	51	75	6
1880.....	164	3.39	87	77	89	75	3	6	12	56	81	6
1876-1880....	779	3.49	424	355	433	346	13	50	57	240	394	25
1881.....	186	3.69	103	83	85	101	7	11	14	58	91	5
1882.....	181	3.50	93	88	92	89	4	10	10	71	80	6
1883.....	187	3.54	96	91	100	87	8	14	15	52	94	4
1884.....	148	2.88	90	58	77	71	4	9	8	41	83	3
1885.....	189	2.51	98	91	94	95	2	11	20	53	100	3
1881-1885.....	891	3.44	480	411	448	443	25	55	67	275	448	21
1886.....	182	3.09	108	74	84	98	4	14	13	69	78	4
1887.....	203	3.21	120	83	103	100	8	9	14	75	95	2
1888.....	212	3.21	114	98	109	103	4	19	12	76	90	11
1889.....	189	3.58	91	98	96	93	5	12	17	72	78	5
1890.....	217	3.13	113	104	119	98	7	13	17	90	85	5
1886-1890.....	1,003	3.14	546	457	511	492	28	67	73	382	426	27
1891.....	222	3.36	135	87	108	114	8	19	19	93	78	5
1892.....	246	3.33	130	116	122	124	8	22	27	96	83	10
1893.....	257	3.46	139	118	116	141	12	17	23	100	98	7
1894.....	221	3.09	122	99	93	128	4	24	13	82	84	14
1895.....	258	3.42	123	135	126	132	14	25	22	81	105	11
1891-1895.....	1,204	3.33	649	555	565	639	46	107	104	452	448	47
1896.....	299	3.98	152	147	136	163	10	24	38	139	79	9
1897.....	328	4.61	179	149	151	177	7	26	30	178	78	9
1898.....	327	4.73	176	151	131	196	5	26	26	157	100	13
1899.....	267	3.58	143	124	117	150	8	16	20	143	77	3
1900.....	290	3.29	161	129	126	164	3	26	34	151	69	7
1896-1900.....	1,511	4.00	811	700	661	850	33	118	148	768	403	41
1901.....	281	3.52	143	138	103	178	7	25	29	127	90	3
1902.....	268	3.37	134	134	109	159	6	26	25	126	80	5
Total, 37 years..	7,009	3.42	3,767	3,242	3,462	3,547	191	504	576	2,676	2,848	214

\* Exclusive of Providence city.

## BRONCHITIS.

The number of decedents, in 1902, whose deaths were reported as having been caused by bronchitis, was 259. This is 27 more than in 1901.

This number represents 3.26 per cent. of *all causes*, and a proportion of .59 to every one thousand of the *population*.

Of the 259 decedents, 117 were males and 142 were females; or at the rate of 82 males to each 100 females.

In relation to parentage, 86 were of native and 173 of foreign parentage.

In regard to age, 155 of the decedents were under 5 years of age, 4 were between 5 and 20 years, 5 between 20 and 40 years, 16 between 40 and 60 years; and of the remaining 79 decedents, above 60 years of age, there were 39 deaths from chronic bronchitis.

During the first four months of the year the decedents from bronchitis numbered 111, during the last four months the number was 100.

The very large increase in the porportionate mortality from bronchitis, during the last twenty years, will scarcely fail to be noticed in Table LXVI.

The following Table will show various facts in relation to the mortality from bronchitis, for thirty-seven years :

TABLE LXVI.

*Mortality in the State from Bronchitis, thirty-seven years, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	99	.64	43	56	47	52	1	4	7	29	56	2
1871.....	24	.78	10	14	11	13	.....	1	1	5	17	....
1872.....	25	.65	10	15	11	14	1	1	1	6	16	....
1873.....	27	.64	12	15	11	16	.....	.....	1	7	18	1
1874.....	39	.96	22	17	12	27	.....	.....	.....	6	32	1
1875.....	57	1.39	32	25	29	28	.....	.....	1	21	33	2
1871-1875.....	172	.84	86	86	74	98	1	2	4	45	116	4
1876.....	57	1.46	23	34	26	31	.....	2	.....	7	46	2
1877.....	69	1.62	32	37	35	34	1	1	1	22	44	....
1878.....	80	1.89	30	50	37	43	1	2	6	22	48	1
1879.....	62	1.47	31	31	31	31	1	1	5	21	34	....
1880.....	91	1.86	49	42	44	47	1	6	6	21	56	1
1876-1880.....	359	1.61	165	194	173	186	4	12	18	93	228	4
1881.....	84	.67	48	36	39	45	1	1	2	25	53	2
1882.....	100	1.27	39	61	47	53	3	2	6	25	60	4
1883.....	111	2.10	56	55	51	60	5	2	3	42	57	2
1884.....	118	2.29	58	60	40	78	6	.....	8	42	62	....
1885.....	163	3.08	82	86	91	77	5	3	13	71	76	....
1881-1885.....	581	2.24	283	298	268	313	20	8	32	205	308	8
1886.....	174	2.96	75	99	81	93	3	4	9	74	83	1
1887.....	176	2.77	90	86	60	116	3	6	19	63	84	1
1888.....	228	3.45	105	123	79	149	3	4	17	110	83	6
1889.....	260	4.20	128	132	90	170	4	8	18	109	110	11
1890.....	275	4.01	140	135	115	159	5	4	15	107	138	6
1886-1890.....	1,113	3.48	538	575	426	687	18	26	78	463	503	25
1891.....	247	3.74	108	139	95	152	13	15	21	85	111	2
1892.....	308	4.16	147	161	117	191	5	15	21	130	130	7
1893.....	315	4.24	164	151	105	210	4	9	21	150	126	5
1894.....	254	3.55	112	142	82	172	4	15	11	98	120	6
1895.....	274	3.64	133	141	92	182	8	15	19	103	122	7
1891-1895.....	1,398	3.87	664	734	491	907	34	69	93	566	609	27
1896.....	276	3.68	143	133	101	175	8	19	9	112	116	12
1897.....	226	3.18	123	103	83	143	6	19	13	88	94	6
1898.....	236	3.42	109	127	76	160	6	14	11	87	103	15
1899.....	241	3.23	118	123	73	168	7	16	10	96	103	9
1900.....	295	3.34	143	152	116	179	6	30	22	101	127	9
1896-1900.....	1,274	3.37	636	638	449	825	33	98	65	484	543	51
1901.....	232	2.91	111	121	88	144	.....	16	7	94	100	15
1902.....	259	3.26	117	142	86	173	7	17	6	105	113	11
Total, 37 years.....	5,487	2.66	2,643	2,844	2,102	3,385	118	252	310	2,084	2,576	147

\* Exclusive of Providence city.

CANCER.

There were 341 decedents, in 1902, whose deaths were caused by cancer, according to the returns. The term cancer includes all the various kinds, and in whatever place located.

This number represents 4.29 per cent. of *all causes*, and a proportion of .76 to every one thousand of the *population*.

The varieties of cancer, as reported, may be found in Tables VII and VIII, on pages 22, 23, 35, 36, and 37. They are classed in Table IX as follows: cancer of the buccal cavity, 8; cancer of the stomach and liver, 122; cancer of the peritonæum, intestines, and rectum, 55; cancer of the female genital organs, 53; cancer of the breast, 53; cancer of the skin, 18; cancer of other organs and organs not specified, 32.

In 1902, the deaths from cancer, in the several divisions of the year, were as follows:

First Quarter.....	92	Third Quarter.....	70
Second Quarter.....	98	Fourth Quarter.....	81
<hr/>		<hr/>	
First half.....	190	Second half.....	151
<hr/>		<hr/>	
Whole year.....		341	

*Sex*.—Of the 341 decedents from cancer, 124 were males and 217 were females; or 36 males and 64 females in every 100.

*Parentage*.—There were 179 of native parentage and 162 of foreign.

The following Table will show the facts of mortality from cancer, in relation to sex, parentage, and locality, for thirty-seven years:

## TABLE LXVII.

*Mortality in the State from Cancer, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	328	2.13	98	230	269	59	19	33	38	87	131	20
1871.....	66	2.13	25	41	47	19	.....	7	5	25	25	4
1872.....	95	2.46	26	69	66	29	4	7	9	21	50	4
1873.....	106	2.53	45	61	76	30	4	6	12	32	44	8
1874.....	87	2.13	23	64	67	20	4	6	12	24	38	3
1875.....	95	2.31	24	71	62	33	3	6	7	25	49	5
1871-1875.....	449	2.18	143	306	318	131	15	32	45	127	206	24
1876.....	106	2.72	27	79	72	34	5	6	8	27	53	7
1877.....	135	3.17	29	106	87	48	3	7	9	37	66	13
1878.....	119	2.82	38	81	79	40	5	11	8	37	48	10
1879.....	125	2.96	39	86	70	55	9	6	9	28	66	7
1880.....	125	2.72	45	80	73	52	5	10	12	26	68	4
1876-1880.....	610	2.73	178	432	381	229	27	40	46	155	301	41
1881.....	145	2.90	40	105	90	55	8	10	12	42	65	8
1882.....	132	2.75	40	92	82	50	5	15	9	43	52	8
1883.....	169	3.20	51	118	105	64	3	17	12	49	86	2
1884.....	156	3.05	39	117	88	68	2	18	21	41	70	4
1885.....	193	3.59	52	141	114	79	8	9	8	67	88	13
1881-1885.....	795	3.07	222	573	479	316	26	69	62	242	361	35
1886.....	162	2.77	42	120	75	87	6	11	9	37	87	12
1887.....	159	2.50	49	110	96	63	8	5	10	49	80	7
1888.....	193	2.93	67	126	128	65	9	10	12	57	88	17
1889.....	189	3.03	65	124	104	85	4	10	13	57	82	23
1890.....	165	2.41	56	109	92	73	14	10	13	46	74	8
1886-1890.....	868	2.71	279	589	495	373	41	46	57	246	411	67
1891.....	177	2.67	48	129	104	73	8	11	15	46	83	14
1892.....	181	2.45	53	128	103	78	7	16	16	57	75	10
1893.....	205	2.75	54	151	124	81	6	15	17	56	92	19
1894.....	214	2.99	67	147	121	93	13	11	23	75	73	19
1895.....	234	3.11	74	160	106	128	13	12	17	79	96	17
1891-1895.....	1,011	2.79	296	715	558	453	47	65	88	213	419	79
1896.....	226	3.01	61	165	117	109	6	21	12	81	89	17
1897.....	254	3.57	77	177	128	126	12	14	22	86	103	17
1898.....	279	4.04	83	196	159	120	18	18	24	75	119	25
1899.....	292	3.92	95	197	135	157	11	16	29	83	132	21
1900.....	292	3.31	96	196	144	148	18	19	15	87	132	21
1896-1900.....	1,343	3.55	412	931	683	660	65	88	103	412	575	101
1901.....	306	3.84	97	209	145	161	6	13	35	90	142	20
1902.....	341	4.29	124	217	179	162	12	19	27	109	147	27
Total, 37 years ....	6,051	2.94	1,849	4,202	3,507	2,544	258	405	500	1,781	2,693	414

\* Exclusive of Providence city.



## CHILD-BIRTH.

Under the head of "Child-birth" are included, in this connection, whatever causes of death that may have occurred as the direct result of child-birth, or parturition.

The number reported in 1902 was 72, and the causes given were as follows :

Puerperal Septicæmia.....	26
"    Nephritis and Eclampsia.....	22
"    Peritonitis.....	7
Post-partum Hemorrhage.....	2
Placenta Prævia.....	5
Rupture of Uterus.....	2
Child-birth and Enteritis.....	1
"    and Heart Disease.....	2
"    and Pulmonary Embolism.....	1
Craniotomy.....	1
Anæmia, due to Pregnancy.....	1
Persistent Vomiting of Pregnancy.....	1
Ruptured Ectopia.....	1

Of the whole number, 15 were of native and 57 of foreign parentage.

This number represents .91 per cent. of *all causes*, and a proportion of .16 to every one thousand of the *population*.

There were 23 less deaths from "child-birth" in 1902 than in 1901.

The following Table will present the various relations in regard to the mortality from child-birth, for thirty-seven years, 1866-1902:

## TABLE LXVIII.

*Mortality in the State from Child-birth, with the Percentage of the Whole Number of Deaths, Parentage, and Locality, for thirty-seven years, from 1866 to 1902, inclusive.*

YEARS.	Number of Deaths from Child-birth.	Per cent.	PARENTAGE.		DIVISIONS OF THE STATE.					
			Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	155	1.01	62	93	7	6	16	59	56	1
1871-1875.....	245	1.19	111	134	7	21	12	76	110	10
1876.....	48	1.24	21	27	3	.....	1	18	23	3
1877.....	46	1.09	18	28	4	3	5	17	17	....
1878.....	43	1.01	23	20	2	4	3	9	21	4
1879.....	43	1.02	21	22	1	7	2	6	23	4
1880.....	51	1.11	23	28	4	4	3	10	27	3
1876-1880.....	231	1.04	106	125	14	18	14	60	111	14
1881.....	60	1.28	26	34	1	1	3	22	29	4
1882.....	50	1.03	18	32	.....	5	1	16	27	1
1883.....	58	1.10	26	32	1	5	9	14	27	2
1884.....	47	.91	17	30	....	3	3	19	18	4
1885.....	47	.87	21	26	....	3	4	15	24	1
1831-1885.....	262	1.04	108	154	2	17	20	86	125	12
1886.....	41	.70	17	24	.....	4	4	15	17	1
1887.....	53	.71	15	38	.....	5	4	18	26	....
1888.....	51	.77	13	38	.....	3	.....	25	20	3
1889.....	41	.65	14	27	1	5	2	16	13	4
1890.....	41	.58	12	29	3	4	4	10	17	3
1886-1890.....	274	.86	92	182	4	24	18	99	117	12
1891.....	32	.35	8	24	.....	3	.....	8	19	2
1892.....	75	1.01	29	46	1	9	3	24	29	9
1893.....	57	.76	23	34	.....	5	4	15	29	4
1894.....	72	1.01	15	57	.....	8	3	25	32	4
1895.....	55	.73	16	39	.....	3	.....	18	30	4
1891-1895.....	291	.77	91	200	1	28	10	90	139	23
1896.....	50	.67	16	34	... .	2	1	24	17	6
1897.....	57	.80	18	39	2	8	.....	21	22	4
1898.....	71	1.03	22	49	1	6	1	28	32	3
1899.....	55	.74	11	44	1	7	3	15	27	2
1900.....	99	1.12	27	72	2	11	4	31	47	4
1896-1900.....	332	.88	94	238	6	34	9	119	145	19
1901.....	95	1.19	38	57	.....	8	6	36	42	3
1902.....	72	.91	15	57	1	6	7	25	32	1
Total, 37 years .....	1,957	.95	717	1,240	42	162	112	650	877	114

\* Exclusive of Providence city.

## CHOLERA INFANTUM.

The number of deaths from cholera infantum, or diarrhœa and enteritis, under 2 years, according to the returns for 1902, was 611.

This number represents 7.68 per cent. of deaths from *all causes*, and a proportion of 1.37 to every one thousand of the *population*.

Of the 611 decedents, 333 were males and 278 were females.

Of parentage, 199 were of native and 412 of foreign parentage ; or about 207 of foreign to every 100 of native parentage\*.

As may be seen on the following page, the number of decedents from cholera infantum, during the thirty-seven years from 1866 to 1902, inclusive, was 13,107.

The proportion to total mortality for the period of thirty-seven years was 6.4 per cent.

There were 112 males to every 100 females among the decedents during the thirty-seven years ; and 165 decedents of foreign parentage to every 100 of native, during the same period.

The following Table shows the whole number of reported deaths from cholera infantum ; the sex and parentage of the decedents ; and the number in each of the larger divisions of the State, in each of the last thirty-seven years :

## TABLE LXIX.

*Mortality in the State from Cholera Infantum, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870.	745	4.84	403	342	352	393	39	44	46	245	324	47
1871.....	172	4.82	85	87	82	90	14	12	12	59	62	13
1872.....	391	8.71	195	196	167	224	16	16	21	157	151	30
1873.....	285	6.19	148	137	165	120	17	14	16	120	99	19
1874.....	265	5.86	140	125	115	150	4	12	5	84	134	26
1875.....	318	6.97	156	162	155	163	20	16	20	108	126	18
1871-1875.....	1,431	6.97	721	707	684	747	71	70	74	528	582	106
1876.....	250	5.75	131	119	105	145	5	12	29	68	124	12
1877.....	259	5.52	139	120	96	163	12	13	9	96	122	7
1878.....	168	3.58	96	72	73	95	7	14	7	64	71	5
1879.....	161	3.43	88	73	71	90	8	16	21	51	59	6
1880.....	247	5.12	123	124	109	138	13	11	10	93	100	20
1876-1880.....	1,085	4.86	577	508	454	631	45	66	76	372	476	50
1881.....	240	4.54	130	110	102	138	10	22	14	75	102	17
1882.....	325	6.10	173	152	133	192	20	11	19	132	130	13
1883.....	242	4.37	124	118	104	138	12	7	22	68	108	5
1884.....	325	6.00	177	148	139	186	10	12	26	114	144	19
1885.....	279	4.92	150	129	128	151	5	23	16	133	86	16
1881-1885.....	1,411	5.45	754	657	606	805	57	75	97	542	570	70
1886.....	377	6.14	179	198	143	234	4	29	15	194	130	15
1887.....	355	5.36	200	155	145	210	16	16	35	160	119	9
1888.....	467	6.78	239	228	184	283	18	35	28	219	149	18
1889.....	396	6.01	209	187	132	264	18	32	20	199	116	11
1890.....	582	8.01	282	300	202	380	19	57	33	245	209	19
1886-1890.....	2,177	6.81	1,109	1,068	806	1,371	75	169	131	1,017	713	72
1891.....	546	8.25	298	248	170	376	21	68	50	255	137	16
1892.....	633	8.56	336	297	210	423	18	77	43	281	201	13
1893.....	603	8.10	324	279	186	417	11	82	44	267	183	16
1894.....	496	6.93	243	253	162	334	13	76	25	225	130	27
1895.....	500	6.64	268	232	155	345	14	57	19	241	150	19
1891-1895.....	2,778	7.55	1,469	1,309	883	1,895	77	360	181	1,209	801	90
1896.....	545	7.26	313	232	165	380	5	62	38	277	148	15
1897.....	425	5.98	204	221	160	265	12	63	30	179	120	21
1898.....	468	6.78	240	228	163	305	14	62	28	211	144	9
1899.....	473	6.34	265	208	127	346	32	48	23	220	139	11
1900.....	557	6.54	311	246	207	350	19	60	47	281	125	25
1896-1900.....	2,468	6.53	1,333	1,135	822	1,646	82	295	166	1,168	676	81
1901.....	401	5.03	215	186	132	269	6	38	20	187	146	4
1902.....	611	7.68	333	278	199	412	24	67	50	230	236	4
Total, 37 years.....	13,107	6.36	6,917	6,190	4,938	8,169	476	1,184	841	5,558	4,524	524

\* Exclusive of Providence city.

## CONSUMPTION.\*

The decedents from consumption, during 1902, numbered 934. The number is 56 less than in the preceding year.

This number represents 11.74 per cent. of *all causes*, and a proportion of 2.09 to every one thousand of the *population*.

*Sex*.—Of these 934 decedents, 475 were males and 459 were females; being about 97 female decedents to every 100 male decedents.

For the period of thirty years (1866–1895) there were about 117 females to every 100 male decedents from consumption, but for the five years 1896–1900 there were but 98 female to every 100 male decedents.

*Parentage*.—There were 283 decedents of native parentage and 651 of foreign; a proportion of 230 of foreign parentage to every 100 of native.

*Season*.—The largest number of deaths, 107, occurred in January; the next largest, 99, in May; the smallest, 61, in November.

The number in each quarter of the year was as follows:

First Quarter.....	263	Third Quarter.....	196
Second Quarter.....	260	Fourth Quarter.....	215
—		—	
First half.....	523	Second half.....	411
Whole year.....			
934			

*Ages*.—During 1902, of the 934 decedents from consumption, 253, or more than one-quarter, were between the ages of 20 and 30; and 211, or more than one-fifth, were between the ages of 30 and 40.

In order to show more concisely the relation of age to mortality from consumption, during 1902, the following age periods and numbers are presented:

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\* Consumption includes deaths from pulmonary tuberculosis, general tuberculosis, tubercular enteritis, and tabes mesenterica, tubercular laryngitis, tubercular meningitis, tubercular peritonitis, tuberculosis of bladder, tuberculosis of hip-joint, tuberculosis of kidney, tuberculosis of leg, and Pott's disease.

Under 10 years of age.....	110
Between 10 and 20 years .....	89
Between 20 and 30 years .....	253
Between 30 and 40 years .....	211
Between 40 and 50 years .....	124
Between 50 and 70 years .....	127
Over 70 years.....	19
Not stated.....	1
Total .....	934

The following Table shows the total deaths from all reported *known causes*, with the *number* and *parentage* of deaths from consumption of the same, in each of the large divisions of the State, and in the whole State, *in each of the last eighteen years*, and also the aggregate for a period of forty years, from 1861 to 1900, inclusive:



# CONSUMPTION.

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## STATISTICS BY COUNTIES.

### NUMBER AND PERCENTAGE.

### FORTY YEARS.

TABLE LXX.—CONSUMPTION.—*Number, Locality, and Percentage.*

LOCALITY.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	Total 40 years, 1861-1890.	
BRISTOL COUNTY.																				
Total deaths, stated causes.	185	221	217	251	208	253	239	232	227	200	256	220	230	212	249	296	239	249	7,578	
Consumption.....	12	23	20	28	20	31	17	29	18	10	29	27	13	29	24	30	25	27	872	
Percentage.....	6.48	10.35	9.22	11.15	9.62	11.85	7.11	12.50	7.93	5.00	11.33	12.27	5.65	13.68	9.64	10.14	10.46	10.84	11.51	
KENT COUNTY.																				
Total deaths, stated causes.	355	385	343	408	454	470	500	598	572	574	521	578	535	513	572	703	598	545	13,820	
Consumption.....	45	43	34	55	45	38	47	51	55	46	54	59	55	54	70	46	55	43	1,837	
Percentage.....	12.70	11.20	9.91	13.44	9.84	8.08	9.40	8.53	9.62	8.01	10.36	10.21	10.28	10.53	12.24	6.52	9.20	7.89	13.29	
NEWPORT COUNTY.																				
Total deaths, stated causes.	408	433	435	458	440	470	597	590	506	516	487	532	507	491	561	608	544	602	15,438	
Consumption.....	47	57	41	32	37	51	51	45	35	46	59	66	55	60	50	52	55	55	1,819	
Percentage. ....	11.52	13.16	9.19	7.00	8.41	10.35	8.51	7.63	6.92	8.91	12.11	12.41	10.85	12.32	8.91	8.55	10.11	9.14	8.49	
PROVIDENCE COUNTY.*																				
Total deaths, stated causes.	1,918	2,087	2,345	2,465	2,286	2,374	2,344	2,632	2,634	2,536	2,796	2,826	2,646	2,381	2,543	3,080	2,726	2,836	65,664	
Consumption.....	273	276	246	273	257	305	236	265	259	242	271	292	288	307	337	333	337	325	8,949	
Percentage.....	14.20	13.05	10.49	11.07	11.24	12.84	10.00	10.07	9.83	9.54	9.33	10.33	10.70	12.89	13.25	10.81	12.36	11.46	13.63	

TABLE LXX.—CONSUMPTION.—*Number, Locality, and Percentage.*—Concluded.

LOCALITY.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	Total 40 years, 1861-1900.
PROVIDENCE CITY.																			
Total deaths, stated causes.	2,157	2,341	2,630	2,644	2,495	2,859	2,615	2,950	3,127	2,878	3,055	2,938	2,796	2,921	3,153	3,665	3,425	3,353	81,560.
Consumption.....	348	368	323	362	315	394	347	342	328	325	394	367	341	405	452	486	474	461	11,877
Percentage.....	16.10	15.65	12.23	13.66	12.55	12.69	13.19	11.59	10.49	11.29	12.90	12.49	12.20	13.86	14.34	13.26	13.84	13.75	14.56
WASHINGTON COUNTY.																			
Total deaths, stated causes.	307	331	351	368	337	316	307	366	306	401	368	381	371	367	358	435	392	311	11,065
Consumption.....	56	59	46	50	53	33	27	42	27	36	32	35	30	31	39	40	44	23	1,635
Percentage.....	17.93	17.52	13.10	13.58	15.68	10.38	13.61	7.38	8.82	8.98	8.70	9.19	8.09	8.45	10.90	9.20	11.22	7.40	14.78
WHOLE STATE.																			
Total deaths, stated causes.	5,330	5,798	6,321	6,594	6,220	6,891	6,586	7,368	7,372	7,105	7,483	7,475	7,085	6,885	7,436	8,790	7,924	7,896	195,125
Consumption.....	781	826	710	800	727	852	740	759	722	705	839	846	777	886	972	987	990	934	26,989
Percentage.....	14.42	14.12	11.19	12.13	11.61	12.29	11.18	10.30	9.79	9.92	11.21	11.32	10.97	12.87	13.07	11.23	12.49	11.83	13.83

\*Exclusive of Providence city.

TABLE LXXI.

*Mortality in the State from Consumption, with the Percentage of the Whole Number of Deaths, from all causes, and the Sex, Parentage, and Locality, in the Aggregate of Different Periods, 1866-1902.*

YEARS.	Total Deaths from Consumption.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	2,718	17.66	1,244	1,474	1,567	1,151	122	231	219	891	1,051	204
1871-1875.....	2,883	14.03	1,267	1,616	1,504	1,379	94	213	163	953	1,234	226
1876-1880.....	3,271	14.66	1,435	1,836	1,473	1,798	104	194	188	1,048	1,498	239
1881-1885.....	3,729	14.40	1,692	2,037	1,427	2,302	113	208	242	1,222	1,751	193
1886.....	826	14.12	382	444	308	518	23	43	57	276	368	59
1887.....	710	11.19	312	398	266	444	20	34	41	246	323	46
1888.....	800	12.13	391	409	284	516	28	55	32	273	362	50
1889.....	727	11.61	356	371	239	488	20	45	37	267	315	53
1890.....	852	12.59	422	430	280	572	31	38	51	305	394	33
1886-1890.....	3,915	12.24	1,863	2,052	1,377	2,538	122	215	218	1,357	1,762	241
1891.....	740	11.18	380	360	248	492	17	47	51	236	347	42
1892.....	759	10.26	360	399	249	510	29	51	45	265	342	27
1893.....	722	9.72	364	358	230	492	18	55	35	259	328	27
1894.....	705	9.85	337	368	214	491	10	46	46	242	325	36
1895.....	839	11.13	392	447	284	555	29	54	59	271	394	32
1891-1895.....	3,765	10.41	1,833	1,932	1,225	2,540	103	253	236	1,273	1,736	174
1896.....	846	11.27	409	437	273	573	27	59	66	292	367	35
1897.....	777	10.93	395	382	269	508	13	55	55	283	341	30
1898.....	886	12.83	460	426	272	614	29	54	60	307	405	31
1899.....	972	13.03	478	494	316	656	24	70	50	337	452	39
1900.....	987	11.19	514	473	324	663	30	46	52	333	486	40
1896-1900.....	4,463	11.82	2,256	2,212	1,454	3,014	123	284	283	1,552	2,051	175
1901.....	990	12.43	524	466	299	691	25	55	55	337	474	44
1902.....	934	11.74	475	459	283	651	27	43	55	325	461	23
Total, 37 years...	26,673	13.00	12,589	14,084	10,609	16,064	833	1,696	1,659	8,958	12,018	1,509

\* Exclusive of Providence city.

CONSUMPTION. *Proportion of Deaths to Population.*

The proportion of deaths from consumption to the *population* in the different localities of the State, during the last seventeen years, may be seen in the following summaries :

*For five years, 1886 to 1890, inclusive.*

	Persons, One Death to every	In every 1,000 of Population.
Bristol County .....	494.....or.....	2.09
Kent County .....	569.....or.....	1.85
Newport County.....	708.....or.....	1.48
Providence County *.....	598.....or.....	1.91
Providence City.....	356.....or.....	2.82
Washington County .....	497.....or.....	2.10
Whole State.....	420.....or.....	2.40

*For five years, 1891 to 1895, inclusive.*

	Persons, One Death to every	In every 1,000 of Population.
Bristol County.....	671.....or.....	1.74
Kent County.....	577.....or.....	1.73
Newport County .....	647.....or.....	1.58
Providence County *.....	537.....or.....	1.91
Providence City ... ..	413.....or.....	2.57
Washington County.....	766.....or.....	1.34
Whole State .....	497.....or.....	2.02

*For five years, 1896 to 1900, inclusive.*

	Persons, One Death to every	In every 1,000 of Population.
Bristol County.....	538.....or.....	1.86
Kent County .....	564.....or.....	1.77
Newport County .....	562.....or.....	1.78
Providence County *.....	487.....or.....	2.05
Providence City .....	383.....or.....	2.58
Washington County .....	716.....or.....	1.39
Whole State.....	462.....or.....	2.17

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\* Exclusive of Providence city.

## 1900.

	Persons, One Death to every	In every 1,000 of Population.
Bristol County.....	438.....or.....	2.28
Kent County.....	652.....or.....	1.54
Newport County.....	1,509.....or.....	0.66
Newport City.....	490.....or.....	2.04
Providence County Towns.....	414.....or.....	2.42
Central Falls.....	673.....or.....	1.49
Pawtucket.....	503.....or.....	1.99
Providence City.....	361.....or.....	2.77
Woonsocket.....	434.....or.....	2.30
Washington County.....	604.....or.....	1.66
Whole State.....	434.....or.....	2.30

## 1901.

	Persons, One Death to every	In every 1,000 of Population.
Bristol County.....	536.....or.....	1.86
Kent County.....	554.....or.....	1.80
Newport County.....	1,080.....or.....	0.92
Newport City.....	498.....or.....	2.01
Providence County Towns.....	434.....or.....	2.30
Central Falls.....	422.....or.....	2.37
Pawtucket.....	532.....or.....	1.88
Providence City.....	380.....or.....	2.63
Woonsocket.....	482.....or.....	2.07
Washington County.....	553.....or.....	1.81
Whole State.....	442.....or.....	2.26

## 1902.

	Persons, One Death to every	In every 1,000 of Population.
Bristol County.....	504.....or.....	1.99
Kent County.....	717.....or.....	1.39
Newport County.....	1,100.....or.....	0.91
Newport City.....	504.....or.....	1.98
Providence County Towns.....	453.....or.....	2.21
Central Falls.....	727.....or.....	1.38
Pawtucket.....	545.....or.....	1.84
Providence City.....	404.....or.....	2.47
Woonsocket.....	415.....or.....	2.41
Washington County.....	1,060.....or.....	0.94
Whole State.....	479.....or.....	2.09



There was a slight decrease in the mortality from consumption, in 1902, as compared with the preceding year, in numbers, as well as in proportion to the population.

### CROUP.

There were 18 decedents from croup, in 1902, as against 24 in 1901.

*Sex.*—Of the 18 decedents from croup, in 1902, there were 8 males and 10 females.

*Parentage.*—There were 5 decedents of native and 13 of foreign parentage.

*Age.*—There were 17 of the decedents under 5 years of age, and 1 of five years and under 10.

### *Season.*—

First Quarter.....	6	Third Quarter.....	3
Second Quarter .....	4	Fourth Quarter.....	5
	—		—
First half.....	10	Second half.....	8
Whole year .....	18		

The following Table will exhibit various facts in relation to mortality from croup for thirty-seven years:

## TABLE LXXII.

*Mortality in the State from Croup, from 1866 to 1892, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	227	1.47	112	115	96	131	6	13	19	82	99	8
1871-1875.....	367	1.79	198	169	164	203	13	30	13	131	169	11
1876.....	102	2.61	50	52	42	60	1	6	.....	26	65	4
1877.....	95	2.23	48	47	34	61	4	3	1	47	40	....
1878.....	98	2.20	45	48	43	50	14	3	7	25	39	5
1879.....	96	2.28	58	38	40	56	3	6	15	25	43	4
1880.....	66	1.45	32	34	27	39	3	3	4	20	30	6
1876-1880....	452	2.03	233	219	186	266	25	21	27	143	217	19
1881.....	101	2.16	45	56	38	63	2	6	4	38	49	2
1882.....	77	1.60	41	36	32	45	1	2	6	33	32	3
1883.....	71	1.40	32	39	33	38	1	6	4	25	35	....
1884.....	80	1.55	40	40	32	48	2	11	4	29	34	....
1885.....	94	1.74	45	49	42	52	4	8	6	46	28	2
1881-1885.....	423	1.63	203	220	177	246	10	33	24	171	178	7
1886.....	90	1.53	45	45	39	51	2	18	12	24	32	2
1887.....	113	1.79	58	55	43	70	9	12	4	43	39	6
1888.....	79	1.19	43	36	24	45	4	2	7	34	27	5
1889.....	80	1.28	37	43	24	56	3	15	1	27	33	1
1890.....	83	1.19	53	30	28	55	2	14	2	32	31	2
1886-1890.....	445	1.39	236	209	168	277	20	61	26	160	162	16
1891.....	67	1.46	40	27	17	50	1	11	11	27	16	1
1892.....	89	1.20	52	37	44	45	1	10	21	21	33	3
1893.....	50	.67	29	21	13	37	4	11	3	25	7	....
1894.....	32	.45	16	16	10	22	1	7	2	15	7	....
1895.....	30	.40	14	16	9	21	.....	6	4	11	9	....
1891-1895.....	268	.84	151	117	93	175	7	45	41	99	72	4
1896.....	24	.32	16	8	5	19	.....	4	.....	12	8	....
1897.....	17	.24	11	6	4	13	.....	8	.....	5	4	....
1898.....	9	.13	4	5	3	6	.....	2	.....	4	2	1
1899.....	11	.15	3	8	4	7	.....	.....	2	5	4	....
1900.....	18	.20	9	9	6	12	.....	4	.....	4	9	1
1896-1900.....	79	.21	43	36	22	57	.....	18	2	30	27	2
1901.....	24	.30	11	13	7	17	1	8	.....	8	6	1
1902.....	18	.23	8	10	5	13	.....	2	1	11	4	....
Total, 37 years..	2,303	1.11	1,195	1,108	918	1,385	82	231	153	835	934	68

\* Exclusive of Providence city.

## DIARRHŒA AND DYSENTERY.

There were 267 decedents from diarrhœa and dysentery, in 1902. Of these, 146 were from diarrhœa or enteritis (ages over 2 years), and the remainder, 121, from dysentery. This number represents 3.4 per cent. of all causes, and a proportion of .59 to every 1,000 of the population.

*Sex.*—Of the 267, 119 were males and 148 were females, or a proportion of 80 males to every 100 females.

*Parentage.*—There were, of the 267 decedents, 104 of native parentage and 163 of foreign parentage, or a proportion of about 157 of foreign parentage to every 100 of native.

*Age.*—There were 90 of the decedents from diarrhœa and dysentery under 5 years of age, and there were 111 over 50 years of age, leaving 66 for all the 45 years between 5 and 50.

*Locality.*—Of the 267 decedents, 5 were in Bristol county; 22 in Kent county; 12 in Newport county; 220 in Providence county; and in 8 Washington county.

*Season.*—Ninety-one of the deaths from diarrhœa and dysentery occurred during the months of July, August, September, and October.

The following Table will show the deaths from diarrhœa and dysentery, with the percentage, sex, parentage, etc., for each of 37 years, beginning with 1860:

## TABLE LXXIII.

*Mortality in the State from Diarrhea and Dysentery, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.		SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
		Per cent.	Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	677	4.40	353	324	323	354	26	46	89	215	254	47
1871-1875.....	580	2.60	317	263	305	275	27	46	23	183	289	12
1876.....	122	2.96	66	56	52	70	3	6	2	41	65	5
1877.....	142	3.19	64	78	73	69	8	6	9	54	55	10
1878.....	93	2.09	42	51	51	42	5	8	2	34	39	5
1879.....	97	2.17	48	49	47	50	9	6	10	27	42	3
1880.....	98	2.03	49	49	50	48	4	6	10	32	42	4
1876-1880.....	552	2.47	269	283	273	279	29	32	33	188	243	27
1881.....	119	2.37	56	63	54	65	2	4	3	47	57	6
1882.....	158	3.11	75	83	69	89	2	4	28	57	64	3
1883.....	182	3.45	86	96	88	94	7	7	16	74	75	3
1884.....	153	2.98	74	79	69	84	10	5	11	66	56	5
1885.....	120	2.23	61	59	51	69	7	6	6	62	35	4
1881-1885.....	732	2.89	352	380	331	401	28	26	64	306	287	21
1886.....	159	2.72	64	95	70	89	7	11	1	73	59	8
1887.....	199	3.11	107	92	70	129	6	16	4	92	72	9
1888.....	157	2.31	69	88	97	60	6	8	3	54	71	15
1889.....	159	2.54	73	86	67	92	1	12	17	71	50	8
1890.....	182	2.62	84	98	74	108	5	9	22	77	63	6
1886-1890.....	856	2.68	397	459	378	478	25	56	47	367	315	46
1891.....	143	2.16	69	74	51	92	4	15	13	48	58	5
1892.....	199	2.69	100	99	82	117	6	14	8	76	89	6
1893.....	159	2.14	79	80	56	103	5	14	7	60	66	7
1894.....	124	1.73	61	63	36	88	.....	8	4	59	43	10
1895.....	101	1.34	38	63	40	61	6	9	3	41	37	5
1891-1895.....	726	2.01	347	379	265	461	21	60	35	284	293	33
1896.....	89	1.18	49	40	40	49	2	5	8	39	28	7
1897.....	107	1.50	48	59	37	70	1	14	7	41	36	8
1898.....	98	1.42	53	45	33	65	2	14	5	32	40	5
1899.....	111	1.47	49	62	34	77	.....	9	11	55	32	4
1900.....	112	1.27	49	63	48	64	6	18	8	40	31	9
1896-1900.....	517	1.37	248	269	192	325	11	60	39	207	167	33
1901.....	96	1.20	43	53	35	61	8	10	2	25	49	2
1902.....	267	3.36	119	148	104	163	5	22	12	104	116	8
Total, 37 years ....	5,003	2.43	2,445	2,558	2,206	2,797	180	358	344	1,879	2,013	229

\* Exclusive of Providence city.

## DIPHTHERIA.

The number of deaths from diphtheria, in 1902, was 148, which was 29 less than in 1901.

This number represents 1.8 per cent. of all causes, or a proportion of .33 to every one thousand of the population.

*Sex.*—Of the 148 decedents, 64 were males and 84 were females.

*Parentage.*—There were 55 of native and 93 of foreign parentage, or a proportion of about 169 of foreign parentage to every 100 of native.

*Season.*—There were 41 deaths from diphtheria in the first quarter, 27 in the second quarter, 25 in the third quarter, and 55 in the fourth quarter.

*Age.*—There were 97 deaths under 5 years of age, 35 between 5 and 10, 7 between 10 and 15, 2 between 15 and 20, and 7 above 20 years of age.

*Locality.*—Of the 148 decedents, 121 were in Providence county, 4 in Bristol county, 9 in Kent county, 12 in Newport county, and 2 in Washington county.

The following Table shows the mortality in the State from diphtheria for thirty-seven years, beginning with 1866, also the percentage of deaths, the sex, parentage, etc.:

TABLE LXXIV.

*Mortality in the State from Diphtheria, 1866 to 1902.*

YEARS.	Whole Number of Deaths, all causes.	Number of Deaths from Diphtheria.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.						
				Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.	
1866-1870...	15,391	181	1.18	83	98	103	78	5	28	30	40	44	34	
1871-1875...	20,540	242	1.18	118	124	154	88	4	35	20	54	105	24	
1876.....	4,116	159	3.86	77	82	69	90	1	2	9	29	111	7	
1877.....	4,450	492	11.56	239	253	233	259	12	44	2	122	295	17	
1878.....	4,441	435	9.80	224	211	201	234	21	29	23	106	245	11	
1879.....	4,472	259	5.79	121	138	143	116	7	19	20	95	106	12	
1880.....	4,829	152	3.40	73	79	75	77	3	6	2	63	61	17	
1876-1880...	22,308	1,497	6.71	734	763	721	776	44	100	56	415	818	64	
1881.....	5,016	216	4.63	106	110	118	98	10	16	8	53	116	13	
1882.....	5,074	101	1.99	48	53	55	46	.....	3	4	29	48	17	
1883.....	5,282	95	1.88	39	56	45	50	1	7	3	26	54	4	
1884.....	5,141	119	2.31	65	54	47	72	8	1	9	39	58	4	
1885.....	5,389	99	1.83	47	52	48	51	5	5	6	39	37	7	
1881-1885...	25,902	630	2.43	305	325	313	317	24	32	30	186	313	45	
1886.....	5,849	228	3.90	98	130	101	127	20	21	23	64	98	2	
1887.....	6,340	287	4.53	135	152	101	186	15	11	4	114	108	35	
1888.....	6,594	191	2.86	87	104	79	112	13	3	9	58	98	10	
1889.....	6,259	184	2.93	80	104	89	95	3	10	11	56	97	7	
1890.....	6,934	211	3.04	112	99	93	118	1	9	16	86	94	5	
1886-1890...	31,976	1,101	3.44	512	589	463	638	52	54	63	378	495	59	
1891.....	6,620	102	1.50	52	50	48	54	2	7	6	40	47	....	
1892.....	7,396	89	1.20	48	41	44	45	1	1	8	23	39	17	
1893.....	7,440	157	2.11	75	82	57	100	1	11	13	67	65	....	
1894.....	7,160	133	1.86	74	59	61	72	.....	3	8	72	47	3	
1895.....	7,535	340	4.51	166	174	145	195	3	7	6	221	94	9	
1891-1895...	36,151	821	2.24	415	406	355	466	7	29	41	423	292	29	
1896.....	7,504	283	3.77	149	134	120	163	5	19	6	109	140	4	
1897.....	7,110	231	3.25	120	111	84	147	3	19	8	111	86	4	
1898.....	6,905	93	1.35	51	42	34	59	.....	12	5	32	40	4	
1899.....	7,458	86	1.15	35	51	31	55	1	10	4	28	40	3	
1900.....	8,823	190	2.15	106	84	76	114	5	22	15	83	53	12	
1896-1900...	37,800	883	2.34	461	422	345	538	14	82	38	363	359	27	
1901.....	7,966	177	2.22	92	85	67	110	2	13	10	66	84	2	
1902.....	7,955	148	1.86	61	84	55	93	4	9	12	52	69	2	
Total, 37 years.	205,989	5,680	2.76	2,734	2,896	2,576	3,104	156	382	300	1,977	2,579	286	

\* Not including Providence city.



## FEVER, MALARIAL.

The number of deaths, during 1902, from diseases classed as fever malarial, was 19. The number in 1901 was 23; in 1900 was 21; in 1899 was 30; in 1898 was 31; in 1897 was 44; in 1896 was 42; in 1895 was 29; in 1894 was 26; in 1893 was 20; in 1892 was 36; in 1891, 31; in 1890, 42; in 1889, 40; in 1888, 71; in 1887, 85; in 1886, 44; in 1885, 30; 1884, 25.

*Sex.*—Of the 19 decedents from malarial fevers, in 1902, 11 were males and 12 were females.

*Parentage.*—There were, of the 19 decedents from malarial diseases, 8 of native parentage and 11 of foreign.

*Season.*—The deaths from malarial diseases occurred in the different seasons of the year as follows:

First Quarter.....	7	Third Quarter.....	7
Second Quarter.....	7	Fourth Quarter.....	5
—	—	—	—
First half . . . . .	7	Second half . . . . .	12
Whole year.....			
19			

*Age.*—The number of decedents in the different periods of life was as follows:

Under 5 years of age.....	4
From 5 to 20 years of age.....	5
From 20 to 40 years of age..	3
From 40 to 60 years of age.....	1
60 and over.....	6
Total.....	19

*Locality.*—All deaths from malarial fever in 1902, occurred in Providence county.

## FEVERS, TYPHOID, ETC.

The following Table exhibits, for each of the last thirty-seven years, the number and the percentage and the sex and parentage of the decedents from fevers returned as from typhoid, and the number in each division of the State:

TABLE LXXV.

*Mortality in the State from Fevers, Typhoid, etc., 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	641	4.2	314	327	398	243	35	39	77	243	184	63
1871-1875.....	740	3.5	350	390	419	321	12	43	34	263	299	89
1876.....	126	3.0	65	61	71	55	5	9	13	44	33	22
1877.....	134	3.0	63	71	65	69	8	10	8	52	44	12
1878.....	150	3.4	68	82	77	73	13	13	6	59	47	12
1879.....	114	2.7	47	67	63	51	4	13	6	44	40	7
1880.....	158	3.4	74	84	94	64	8	12	5	66	52	15
1876-1880.....	682	3.1	317	365	370	312	38	57	38	265	216	68
1881.....	143	2.8	74	69	74	69	4	13	14	58	41	13
1882.....	229	4.7	111	118	100	129	6	11	5	56	145	6
1883.....	258	4.8	146	112	117	141	9	16	10	82	134	7
1884.....	165	3.2	83	82	78	87	7	7	12	66	64	9
1885.....	158	2.9	71	87	70	88	6	14	8	69	53	8
1881-1885.....	953	3.7	485	468	439	514	32	61	49	331	437	43
1886.....	169	2.9	78	91	76	93	6	8	11	66	70	8
1887.....	127	2.0	67	60	58	69	2	14	9	49	38	15
1888.....	235	3.6	125	110	88	147	20	24	14	66	102	9
1889.....	143	2.3	85	58	56	87	2	17	9	46	60	9
1890.....	107	1.5	58	49	39	68	7	8	5	37	43	7
1886-1890.....	781	2.5	413	368	317	464	37	71	48	264	313	48
1891.....	149	2.2	86	63	56	93	5	8	17	46	63	10
1892.....	133	1.8	75	58	55	78	5	12	9	49	51	7
1893.....	115	1.6	65	50	41	74	4	7	5	40	52	7
1894.....	159	2.2	93	66	46	113	5	13	13	56	70	2
1895.....	125	1.7	73	52	55	70	3	7	11	52	48	4
1891-1895.....	681	1.9	392	289	253	428	22	47	55	243	284	30
1896.....	113	1.5	66	47	44	69	6	8	9	39	43	8
1897.....	66	0.9	43	23	33	33	4	4	4	25	23	6
1898.....	76	1.1	49	27	23	53	2	3	11	20	39	1
1899.....	90	1.2	53	37	41	49	3	6	9	24	42	6
1900.....	127	1.4	70	57	51	76	4	6	23	43	39	12
1896-1900.....	472	1.2	281	191	192	280	19	27	56	151	186	33
1901.....	103	1.3	62	41	34	69	7	5	11	28	46	6
1902.....	91	1.1	52	39	29	62	2	5	12	30	38	4
Total, 37 years ....	5,144	2.5	2,666	2,478	2,451	2,693	204	355	380	1,818	2,003	384

\* Exclusive of Providence city.

During 1902, of the 91 decedents from typhoid fever, there were 52 males and 39 females.

During the period of thirty-seven years, 1866 to 1902, inclusive, the proportions of the sexes of the decedents from typhoid fever in the State were 93 females to every 100 males.

*Parentage.*—There were 29 decedents from enteric fever, of native parentage, in 1902, and 62 of foreign parentage.

*Season.*—

First Quarter.....	15	Third Quarter.....	18
Second Quarter.....	17	Fourth Quarter.....	41
	—		—
First half.....	32	Second half.....	59
Whole year.....		91	

The following Table shows the number of decedents from fevers, in each division of ages, in each of the last thirty-seven years, in the State of Rhode Island :

## TABLE LXXVI.

*Mortality from Typhoid Fever in Age Periods.*

YEARS.	PERIODS OF LIFE.									
	Under 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 and over.
1866.....	23	10	21	26	21	16	9	14	10	.....
1867.....	17	6	23	33	12	11	8	4	2	2
1868.....	10	7	10	21	8	8	10	5	5	.....
1869.....	10	8	14	28	9	7	9	8	6	2
1870.....	26	13	31	46	19	25	8	8	8	2
1871.....	13	10	20	28	18	16	9	4	5	2
1872.....	17	18	34	54	20	9	12	11	3	1
1873.....	27	12	34	31	25	13	13	7	8	2
1874.....	10	14	26	32	9	5	10	3	6	2
1875.....	23	14	19	43	18	10	10	6	4	.....
1876.....	21	10	15	24	14	9	6	16	6	3
1877.....	22	13	18	36	20	8	5	7	2	2
1878.....	17	16	27	47	13	11	12	2	3	2
1879.....	19	7	14	26	15	6	3	12	8	3
1880.....	25	12	24	43	23	12	10	5	3	.....
1881.....	25	9	19	29	14	11	9	12	11	4
1882.....	24	22	44	69	27	14	9	10	9	1
1883.....	36	25	46	75	31	12	11	10	8	2
1884.....	24	13	19	47	22	9	12	10	5	3
1885.....	35	12	16	25	26	11	11	12	6	4
1886.....	29	9	25	41	20	14	17	8	5	1
1887.....	24	8	16	31	16	10	5	8	4	4
1888.....	27	27	42	75	29	16	12	3	4	.....
1889.....	18	12	29	41	18	8	9	5	3	.....
1890.....	13	11	13	35	14	5	6	6	4	.....
1891.....	12	10	25	50	26	10	7	6	2	.....
1892.....	10	11	18	42	20	15	10	6	1	.....
1893.....	6	7	16	43	15	10	10	6	2	.....
1894.....	18	8	31	57	21	12	6	3	2	.....
1895.....	10	9	10	56	15	7	9	5	4	.....
1896.....	10	3	18	35	13	16	6	7	5	.....
1897.....	6	4	7	22	11	9	3	3	1	.....
1898.....	8	5	8	23	21	9	1	1	.....	.....
1899.....	17	15	5	19	17	10	2	1	2	1
1900.....	13	9	17	44	23	12	6	2	1	.....
1901.....	8	4	12	25	29	16	5	3	1	.....
1902.....	6	4	9	31	19	11	3	4	3	.....
Total, 37 years .....	659	407	775	1,433	691	413	303	243	162	43

TABLE LXXVII.

*Comparative Exhibit of the Percentage of Deaths from Typhoid Fever to Total Deaths from specified causes, in Six New England States, for twenty-seven years, 1876 to 1902.*

STATES.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
RHODE ISLAND.....	3.0	3.0	3.4	2.7	3.4	2.8	4.7	4.8	3.2	2.9	2.9	2.0	3.6	2.2	1.5	2.2	1.8	1.6	2.2	1.7	1.5	0.9	1.1	1.2	1.4	1.3	1.1
Maine.....																		2.4	2.6	2.5	1.9	1.7	1.3	1.9	1.7	1.7	2.1
New Hampshire.....									2.2	2.2	3.0	2.1	2.2	2.4	1.9	2.4	1.3	1.4	1.7	1.4	1.9	1.3	1.2	1.2	1.3	1.0	1.1
Vermont.....	4.2	4.8	3.4	2.7	3.5	5.5	3.4	3.1	3.0	2.2	2.5	2.2	2.5	2.2	2.7	1.6	1.6	1.4	2.5	2.0	1.7	1.6	1.3	1.7	1.9	1.6	1.0
Massachusetts.....	2.7	2.7	2.3	1.9	2.5	2.9	2.9	2.3	2.4	2.0	2.1	2.3	2.2	2.2	1.9	1.8	1.7	1.5	1.6	1.4	1.5	1.3	1.4	1.3	1.3	1.2	1.1
Connecticut.....	3.6	3.3	2.7	1.8	2.5	2.5	3.1	2.1	2.5	1.1	2.2	1.2	2.2	2.2	2.3	2.2	0.1	8.1	8.1	8.1	5.1	1.1	1.3	1.3	1.8	1.9	1.5

## DISEASES OF THE HEART.

The number of decedents from the various forms of diseases of the heart, as reported in 1902, was 704. The number is 19 greater than that of 1901.

This number represents 8.8 per cent. of all causes, and a proportion of 1.57 to every 1,000 of the population.

*Sex.*—There were 363 male decedents and 341 female decedents; a proportion of about 106 males to every 100 females.

*Parentage.*—Of the 704 decedents from diseases of the heart, in 1902, there were 323 of native parentage and 381 of foreign, a proportion of about 85 of native parentage to every 100 of foreign. Until recently it has been the invariable rule of the whole period of registration that the native population is more subject to heart disease than the foreign.

The following Table exhibits, for each of the last thirty-seven years, 1866 to 1902, inclusive, the number and percentage, and the sex and parentage, of the decedents from diseases of the heart, and the number of the same, in each division of the State:



TABLE LXXVIII.

*Mortality from Diseases of the Heart, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	590	3.83	305	282	395	195	22	48	48	184	262	26
1871-1875.....	922	4.49	458	464	595	327	21	46	82	248	465	60
1876.....	166	4.03	86	80	109	57	9	11	10	38	86	12
1877.....	182	4.09	94	88	110	72	3	7	9	57	93	13
1878.....	166	3.73	88	78	109	57	5	11	15	38	83	14
1879.....	202	4.78	114	88	127	75	8	20	16	38	111	9
1880.....	231	5.03	125	106	146	85	9	2	29	59	104	9
1876-1880....	947	4.25	507	440	601	346	34	70	79	230	477	57
1881.....	264	5.65	131	133	154	110	9	21	24	73	121	16
1882.....	255	5.31	116	139	162	93	8	16	23	55	142	11
1883.....	325	6.20	167	158	179	146	8	27	30	70	172	18
1884.....	285	5.60	135	150	163	122	6	16	25	87	139	12
1885.....	349	6.48	162	187	198	151	13	27	25	94	159	31
1881-1885.....	1,478	5.71	711	767	856	622	44	107	127	379	733	68
1886.....	330	5.20	152	178	184	146	12	20	18	82	168	30
1887.....	406	6.40	205	201	240	166	7	21	36	123	193	26
1888.....	436	6.56	196	240	240	196	11	22	40	122	210	31
1889.....	460	7.35	233	227	258	202	19	31	39	143	199	29
1890.....	405	5.84	222	183	219	186	15	49	27	114	172	28
1886-1890.....	2,037	6.37	1,008	1,029	1,141	896	64	143	160	584	942	144
1891.....	480	7.25	248	232	244	236	21	37	38	137	210	37
1892.....	506	6.84	260	246	252	254	22	47	48	163	200	26
1893.....	535	7.19	264	271	264	271	20	43	30	174	238	30
1894.....	476	6.65	251	225	246	230	16	32	41	161	192	34
1895.....	535	7.10	260	275	275	260	14	41	54	180	210	36
1891-1895.....	2,532	7.01	1,283	1,249	1,281	1,251	93	200	211	815	1,050	163
1896.....	556	7.41	294	262	266	290	19	40	38	189	231	30
1897.....	570	8.02	305	265	295	275	9	38	42	200	230	51
1898.....	549	7.95	295	254	282	267	17	42	44	171	237	38
1899.....	648	8.68	314	334	334	314	20	56	72	190	267	43
1900.....	701	7.95	319	382	319	382	23	49	57	241	284	48
1896-1900.....	3,024	8.00	1,527	1,497	1,496	1,528	87	225	253	991	1,249	219
1901.....	685	8.60	341	344	303	382	20	46	60	245	273	41
1902.....	704	8.85	363	341	323	381	25	48	59	241	281	50
Total, 37 years..	12,919	6.27	6,506	6,413	6,991	5,928	410	933	1,079	3,917	5,732	848

\* Exclusive of Providence city.

*Sex.*—Of the 12,919 persons deceased from diseases of the heart, in the last thirty-seven years, 6,506 were males and 6,413 were females; or 103 males to each 100 females.

*Parentage.*—Of the 12,919 decedents, during thirty-seven years, 6,991 were of native parentage and 5,928 of foreign. The proportions would, therefore, stand as follows: To every 100 of foreign parentage there were about 116 of native; or about 46 native and 54 of foreign parentage in every 100 deaths. This difference has been gradually diminishing. In 1902 there were 58 more deaths of foreign than of native parentage, or about 46 of native and 54 of foreign in every 100 deaths.

Diseases of the heart rank third in the order of causes in 1902.

The following Table shows the number of decedents from diseases of the heart, in each divisional period of life, in each of the last thirty-seven years:

TABLE LXXIX.

*Mortality from Diseases of the Heart, in Age Periods.*

YEARS.	PERIODS OF LIFE.								Not stated.
	Under 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 and over.	
1866.....	18	8	14	17	10	23	21	4	.....
1867.....	11	11	10	13	22	16	27	4	.....
1868.....	15	5	13	11	14	28	25	5	.....
1869.....	21	4	14	18	20	22	21	7	1
1870.....	19	6	11	13	20	21	23	3	1
1871.....	9	12	10	19	23	36	28	6	1
1872.....	27	12	22	19	31	36	29	13	.....
1873.....	19	11	28	18	25	35	42	9	2
1874.....	20	16	26	21	27	50	40	12	2
1875.....	14	16	25	20	32	29	41	9	.....
1876.....	14	10	15	19	20	38	39	10	1
1877.....	15	11	20	18	27	45	33	13	.....
1878.....	16	8	18	16	26	36	35	11	.....
1879.....	19	9	13	25	33	51	36	16	.....
1880.....	15	10	18	23	38	49	49	28	1
1881.....	32	13	26	33	37	49	53	21	.....
1882.....	22	17	24	25	36	51	61	17	2
1883.....	39	13	21	33	52	65	76	26	.....
1884.....	15	25	21	32	45	61	50	32	4
1885.....	38	13	24	42	61	69	78	24	.....
1886.....	39	18	23	38	52	68	69	18	.....
1887.....	52	30	23	35	61	79	87	39	.....
1888.....	39	25	30	54	84	97	74	33	.....
1889.....	45	25	37	45	69	85	118	35	1
1890.....	34	15	24	53	69	78	96	36	.....
1891.....	40	18	45	41	85	109	101	38	3
1892.....	54	21	32	59	93	111	104	31	1
1893.....	55	27	48	68	81	116	97	42	1
1894.....	40	28	36	64	69	102	102	35	.....
1895.....	33	20	44	57	82	137	111	51	.....
1896.....	40	33	46	65	98	106	117	50	1
1897.....	40	34	43	68	74	145	117	49	.....
1898.....	34	22	31	57	91	134	130	50	.....
1899.....	23	28	37	77	111	153	169	48	2
1900.....	47	32	49	61	130	164	164	52	2
1901.....	40	40	55	65	124	152	139	63	2
1902.....	25	37	51	77	127	161	144	79	3
Total, 37 years.....	1,078	683	1,032	1,419	2,099	2,807	2,746	1,024	31

The results of thirty-seven years of registration, with record of ages of decedents from diseases of the heart, show, in periods of twenty years each of life, the following percentages:

Under 20 years of age .....	8.4 per cent.
Between 20 and 40.....	13.3 per cent.
Between 40 and 60.....	27.2 per cent.
Between 60 and 80.....	43.0 per cent.
Over 80.....	7.9 per cent.
Not stated.....	.2 per cent.
Total.....	100.0 per cent.

It will be seen that 43 per cent. of all the deaths from diseases of the heart were of persons over sixty years of age, and under eighty.

Diseases of the heart have acquired large importance as a cause of death. From 38.7 in every 1,000 deaths from all causes, in 1866, heart diseases have gradually increased to 88.5 in every 1,000 in 1902.

### INFLUENZA.

The event, during the first four months of the year 1890, of a very extraordinary and perhaps unprecedented prevalence of a form of influenza, which was unlike that of ordinary occurrence in that it affected indiscriminately all the functions and nearly all the organs of the body, varying with the individuals attacked, and the re-appearance of the same, although in greatly lessened numbers, in 1891, warrants a continued notice not given previous to 1890 in the Registration reports to the affection so named.

The disease was, in 1890, mostly largely confined to the respiratory passages, and resulted in a largely increased mortality from bronchitis and consumption. During 1891 the disease was equally as severe, affecting in a larger measure the brain and other nerve centres, and the direct mortality was even larger than that of 1890. The prevalence was largest during the second quarter of the year, and again in December.

The increase in December of 1891 was followed by a sudden augmentation in the first four months of the following year, 1892, the greatest number of deaths, 198, occurring in January of 1892. The total for 1892 was 336, or about twice as much as for either of the previous years. In 1893 there were 84 deaths reported as resulting from influenza. This was 251 less than in 1892. In 1894

there were 166 deaths from influenza reported, an increase of 95 per cent. from 1893, and a decrease of over 50 per cent. from 1892. From influenza there were 115 deaths in 1895, in 1896 there were but 42 deaths, in 1897 there were 153 deaths, in 1898 there were 75 deaths, in 1899 there were 219 deaths, in 1900 there were 255 deaths, in 1901 there were 146 deaths, and in 1902 there were but 37 deaths.

*Sex.*—Of the 37 deaths from influenza, in 1902, 17 were males and 20 were females.

*Parentage.*—The parent nativity of the decedents was 17 of native and 20 of foreign.

*Season.*—Of the 37 deaths from influenza, during 1902, 18 occurred in the first quarter of the year, 12 in the second, and 7 in the fourth quarter.

*Age.*—There were 9 under 5 years of age, 2 from 5 to 20 years, 1 from 20 to 40, 4 from 40 to 60, 14 from 60 to 80, 7 from 80 years of age and over.

The following Tables will show the proportionate nativity, sex, and locality of the disease, for the past thirteen years.

The greatest mortality appears to be among females, there being 152 females to every 100 males. The parentage appears to be nearly equally divided between native and foreign, there being 102 foreign to 100 native.

The largest number of deaths occurred in Providence city, but this is not out of proportion to the proportionate number and density of population.

Referring to the age periods, it will be seen that the greatest mortality occurred in the period from 70 to 80, there being 429, or 21.73 per cent. of the whole number of deaths from this disease. Taking the three decennials, including 60 to 90, we have 1,026 deaths, or 51.97 per cent. of all by ages.

By season, the greatest number of deaths, 611, occurred in January; the next in number, 329, in February; followed by 303 in April, 265 in March, and 198 in December.



*Mortality in the State from Influenza, 1890 to 1902, inclusive,*

YEARS.	Number of Deaths.		SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
		Per cent.	Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1890.....	168	2.42	72	96	63	100	6	14	12	61	70	5
1891.....	177	2.67	67	110	91	86	7	14	14	60	69	13
1892.....	366	4.54	142	194	170	166	11	27	13	115	144	26
1893.....	85	1.14	34	51	47	38	7	3	5	33	32	5
1894.....	166	2.32	62	104	88	78	6	9	15	48	75	13
1895.....	115	1.53	48	67	63	52	3	10	9	42	41	10
1896.....	42	.56	15	27	16	26	2	1	2	30	6	1
1897.....	153	2.15	52	101	72	81	3	6	3	72	64	5
1898.....	75	1.09	29	46	40	35	8	3	5	30	26	3
1899.....	219	2.94	82	137	104	115	9	6	14	94	80	16
1900.....	255	2.89	108	147	120	135	8	14	16	112	98	7
1901.....	146	1.83	55	91	79	67	8	6	3	52	67	10
1902.....	37	.47	17	20	17	20	3	2	1	18	12	1
1890-1902.....	1,974	2.04	783	1,191	975	999	81	115	112	767	784	115

*Influenza by Age Periods, 1890 to 1902.*

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Not stated.
1890.....	14	18	4	8	14	22	18	17	19	17	11	5	1
1891.....	11	12	.....	8	14	6	14	21	29	42	19	1	.....
1892.....	26	20	2	6	13	19	25	33	74	74	41	3	.....
1893.....	7	5	4	3	6	1	7	4	13	16	16	2	1
1894.....	6	14	2	5	11	6	20	12	32	37	17	4	.....
1895.....	14	10	1	5	8	6	9	10	16	24	9	3	.....
1896.....	1	3	2	1	1	2	2	4	13	6	6	1	.....
1897.....	11	1	2	5	2	10	10	22	22	38	25	5	.....
1898.....	12	4	1	1	4	6	5	8	7	13	8	6	.....
1899.....	27	15	3	4	11	13	13	26	24	53	23	7	.....
1900.....	9	7	1	2	14	9	13	25	56	65	54	.....	.....
1901.....	14	2	3	2	4	9	6	18	29	35	24	.....	.....
1902.....	9	1	.....	1	.....	1	1	3	5	9	5	2	.....
1890-1902.....	161	112	25	51	102	110	143	203	339	429	258	39	2
Per cent. of all ages for 13 yrs., 1890-1902	8.16	5.67	1.27	2.58	5.17	5.57	7.25	10.28	17.17	21.73	13.07	1.98	.10

\* Exclusive of Providence city.



*Influenza by Months, 1890 to 1902, inclusive.*

YEARS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
1890.....	108	27	11	8	4	2	2	.....	1	3	1	1	168
1891.....	4	3	1	22	19	19	2	2	2	4	1	98	177
1892.....	198	52	31	27	9	6	.....	2	3	2	1	5	336
1893.....	5	1	2	19	12	4	1	2	1	1	1	36	85
1894.....	102	27	10	9	7	3	2	1	1	.....	1	3	166
1895.....	12	20	43	16	7	6	5	.....	.....	.....	2	4	115
1896.....	9	4	5	7	5	4	1	2	2	1	.....	2	42
1897.....	26	67	29	11	4	3	.....	.....	2	2	3	6	153
1898.....	7	2	15	13	9	5	2	.....	1	.....	1	20	75
1899.....	93	59	27	16	7	1	.....	3	1	2	2	8	219
1900.....	5	16	53	134	26	8	.....	3	.....	1	4	5	255
1901.....	38	48	27	13	9	3	.....	.....	1	.....	3	4	146
1902.....	4	3	11	8	3	1	.....	.....	.....	.....	1	6	37
1890-1902.....	611	329	265	303	121	65	15	15	15	16	21	198	1,974

## INSANITY.

There were 17 deaths from insanity, in 1902. The percentage to the whole number of deaths was .21

*Sex.*—There were 10 male and 7 female decedents.

*Parentage.*—The number of native decedents from insanity was 9, and of foreign parentage 8.

Of the 17 deaths in 1902, there were 6 from dementia, 1 from insanity, 2 from acute mania, 1 from chronic mania, and 7 from melancholia. There were other deaths of insane persons, but as insanity was not the immediate cause of death these deaths were not classed under insanity.

The following Table shows the mortality in the State from insanity for thirty-seven years, with percentage to deaths from all causes, sex, parentage, etc., from 1866 to 1902, inclusive :

## TABLE LXXX.

*Mortality in the State from Insanity, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.		SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	72	.47	33	39	52	20	.....	5	4	7	55	1
1871-1875.....	106	.52	55	51	76	30	3	2	8	33	58	2
1876.....	12	.28	5	7	9	3	1	2	1	1	6	1
1877.....	19	.49	9	10	9	10	.....	1	.....	5	12	1
1878.....	22	.50	5	17	16	6	.....	.....	1	3	17	1
1879.....	17	.40	11	6	10	7	.....	.....	.....	5	11	1
1880.....	19	.39	9	10	13	6	.....	1	2	6	9	1
1876-1880.....	89	.39	39	50	57	32	1	4	4	20	55	5
1881.....	32	.63	15	17	22	10	1	1	3	10	16	1
1882.....	23	.45	9	14	18	5	.....	1	.....	8	12	2
1883.....	29	.55	12	17	17	12	1	2	.....	7	18	1
1884.....	36	.69	17	19	24	12	2	3	.....	21	9	1
1885.....	35	.67	16	19	18	17	.....	.....	2	23	10	....
1881-1885.....	155	.59	69	86	99	56	4	7	5	69	65	5
1886.....	49	.83	21	28	28	21	3	1	1	37	7	....
1887.....	64	1.01	35	29	33	31	1	.....	1	56	.....	6
1888.....	43	.64	21	22	24	19	1	2	.....	33	7	....
1889.....	22	.35	14	8	12	10	.....	.....	.....	14	8	....
1890.....	30	.44	19	11	16	14	1	1	1	13	14	....
1886-1890.....	208	.65	110	98	113	95	6	4	3	153	36	6
1891.....	21	.32	10	11	16	5	.....	1	.....	5	13	2
1892.....	27	.37	17	10	15	12	3	1	.....	8	14	1
1893.....	39	.53	14	25	13	26	.....	.....	.....	30	9	....
1894.....	40	.68	20	29	22	27	1	1	.....	27	18	2
1895.....	72	.96	36	36	44	28	3	.....	1	41	27	....
1891-1895.....	208	.57	97	111	110	98	7	3	1	111	81	5
1896.....	53	.70	28	25	22	31	.....	2	.....	40	11	....
1897.....	103	1.45	53	50	51	52	.....	3	4	78	12	6
1898.....	82	1.19	41	41	37	45	3	.....	2	60	10	7
1899.....	66	.88	37	29	33	33	3	2	1	55	5	....
1900.....	54	.61	29	25	33	21	1	1	2	45	5	....
1896-1900.....	358	.95	188	170	176	182	7	8	9	278	43	13
1901.....	33	.41	18	15	10	23	.....	.....	.....	26	7	....
1902.....	17	.21	10	7	9	8	3	5	.....	6	3	....
Total, 37 years ....	1,246	.60	619	627	702	544	31	38	60	684	396	37

\* Exclusive of Providence city.

## DISEASES OF THE KIDNEYS.

There were 535 deaths returned, during 1902, with diseases of the kidneys assigned as the cause.

This number represents 6.7 per cent. of all causes, and a proportion of 1.19 to every 1,000 of the population.

*Sex.*—Of the 535 there were 290 males and 245 females.

*Parentage.*—There were 230 of native parentage and 305 of foreign, or about 75 of native to every 100 of foreign parentage.

*Age.*—Of the 535 decedents from kidney diseases, 19 were under five years of age, 23 from five to twenty, 98 from twenty to forty, 179 from forty to sixty, 183 from sixty to eighty, 33 eighty and over.

Diseases of the kidneys have largely increased in number, and much more largely in proportion, during the last thirty-seven years.

During the ten years from 1866 to 1875, inclusive, the proportion of deaths from kidney diseases, to whole number of deaths from all causes, was but little more than one per cent., while during the ten years from 1891 to 1900, inclusive, the proportion was very nearly five per cent.

The following Table will present various facts in relation to the mortality from diseases of the kidneys in Rhode Island, for thirty-seven years, 1866-1902:

TABLE LXXXI.

*Mortality in the State from Kidney Diseases, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	135	.88	94	41	91	44	6	7	25	23	66	8
1871-1875.....	295	1.44	167	128	187	108	11	11	17	67	172	17
1876.....	50	1.28	22	28	32	18	1	1	7	10	28	3
1877.....	67	1.57	40	27	35	32	2	1	.....	14	49	1
1878.....	80	1.89	50	30	49	31	4	3	3	21	47	2
1879.....	79	1.88	51	28	44	35	1	3	1	23	43	8
1880.....	91	2.02	52	39	51	40	1	5	10	27	46	2
1876-1880.....	367	1.65	215	152	211	156	9	13	21	95	213	16
1881.....	79	1.69	40	39	47	32	7	5	4	14	48	1
1882.....	86	1.79	50	36	45	41	2	5	10	15	52	2
1883.....	129	2.43	72	57	74	55	5	2	17	37	60	8
1884.....	118	2.29	53	65	66	52	5	11	12	28	54	8
1885.....	159	2.97	92	67	86	73	8	10	17	31	88	5
1881-1885.....	571	2.20	307	264	318	253	27	33	60	125	302	24
1886.....	155	2.49	85	70	93	62	3	10	22	37	71	12
1887.....	169	2.66	92	77	90	79	5	6	16	43	92	7
1888.....	213	3.23	102	111	122	91	10	10	24	46	115	8
1889.....	210	3.38	119	91	122	88	14	13	15	62	96	10
1890.....	229	3.20	116	113	109	120	15	8	21	59	116	10
1886-1890.....	976	3.05	514	462	536	440	47	47	98	247	490	47
1891.....	245	3.06	123	122	122	123	9	12	25	72	114	13
1892.....	258	3.49	135	123	127	131	9	11	24	70	128	16
1893.....	302	4.06	154	148	141	161	19	15	25	81	147	15
1894.....	313	4.37	152	161	164	149	22	20	33	84	136	18
1895.....	341	4.54	176	165	171	170	23	19	29	96	163	11
1891-1895.....	1,459	3.90	740	720	725	734	82	77	136	403	688	73
1896.....	395	5.26	209	186	188	207	19	39	34	125	160	18
1897.....	387	5.44	198	189	185	202	24	19	30	129	164	21
1898.....	471	6.82	228	243	207	264	19	23	25	153	219	32
1899.....	477	6.40	241	236	215	262	23	30	33	148	223	20
1900.....	516	5.85	240	276	275	241	16	19	25	186	236	34
1896-1900.....	2,246	5.94	1,116	1,130	1,070	1,176	101	130	147	741	1,002	125
1901.....	505	6.84	266	239	224	281	20	33	33	167	231	21
1902.....	535	6.73	290	245	230	305	27	29	26	194	243	16
Total, 37 years....	7,089	3.44	3,709	3,380	3,592	3,497	330	380	563	2,062	3,407	347

\* Exclusive of Providence city.

## DISEASES OF THE LIVER.

There were 112 deaths reported, in 1902, as having been caused by structural diseases of the liver.

This number represents 1.41 per cent. of all causes, and a proportion of .25 to every 1,000 of the population.

Of the 112 decedents, there were 54 males and 58 females.

There were 54 of native parentage and 58 of foreign.

Seventy-seven of the whole number were of persons of 40 years of age and over.

In the age period of from 5 to 40, there were but 35 decedents from diseases of the liver.

The mortality from such diseases does not depend to any marked extent upon the influence of season.

Table LXXXII will present various facts relating to diseases of the liver during thirty-seven years.

TABLE LXXXII.

*Mortality from Diseases of the Liver, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
1866-1870.....	201	1.31	113	88	118	83	12	14	36	47	70	22
1871-1875.....	202	.98	91	111	119	83	18	14	12	56	88	14
1876.....	45	1.09	26	19	27	18	1	5	5	11	18	5
1877.....	52	1.17	23	29	31	21	1	.....	7	16	24	4
1878.....	49	1.10	25	24	32	17	8	1	6	14	18	2
1879.....	52	1.24	27	25	31	21	4	4	2	14	22	6
1880.....	58	1.27	29	29	40	18	4	3	8	15	25	3
1876-1880.....	256	1.15	130	126	161	95	18	13	28	70	107	20
1881.....	46	.92	30	16	21	25	2	2	6	8	24	4
1882.....	62	1.22	34	28	36	26	3	5	10	17	24	3
1883.....	51	.94	27	24	20	31	5	6	4	16	18	2
1884.....	48	.93	22	26	23	25	5	3	5	2	31	2
1885.....	61	1.13	24	37	32	29	2	6	6	21	24	2
1881-1885.....	268	1.03	137	131	132	136	17	22	31	64	121	13
1886.....	54	.92	29	25	26	28	4	4	4	14	28	...
1887.....	86	1.35	40	46	38	48	3	5	3	31	39	5
1888.....	68	1.03	38	30	36	32	1	5	6	28	26	2
1889.....	70	1.12	30	40	31	39	1	2	10	26	29	2
1890.....	65	.94	42	23	29	36	3	4	6	21	26	5
1886-1890.....	343	1.07	179	164	160	183	12	20	29	120	148	14
1891.....	81	1.23	41	40	28	53	3	4	9	26	38	1
1892.....	89	1.20	39	50	34	55	3	5	4	27	45	5
1893.....	72	.97	43	29	30	42	4	8	6	15	36	3
1894.....	93	1.30	43	50	42	51	2	9	9	42	24	7
1895.....	81	1.07	43	38	28	53	.....	6	10	27	31	7
1891-1895.....	416	1.15	209	207	162	254	12	32	38	137	174	23
1896.....	110	1.47	56	54	37	73	3	7	6	40	48	6
1897.....	58	.82	31	27	22	36	4	3	6	15	25	5
1898.....	91	1.32	41	50	31	60	3	7	6	26	41	8
1899.....	92	1.23	48	44	22	70	5	6	15	25	35	6
1900.....	100	1.13	56	44	36	64	.....	10	7	29	47	7
1896-1900.....	451	1.19	232	219	148	303	15	33	40	135	196	32
1901.....	100	1.26	54	46	31	69	3	8	7	31	46	5
1902.....	112	1.41	54	58	54	58	2	3	7	41	50	9
Total, 37 years ....	2,349	1.14	1,199	1,150	1,085	1,264	109	159	228	701	1,000	152

\* Exclusive of Providence city.



## DROPSY.

During the years 1899, 1900, 1901, and 1902, there were no deaths from dropsy, so called, all cases so reported having been ascertained to have been the result of some definite cause, and placed in that division.

The continuance of this table has been discontinued, but is here inserted that the changes and advance in perfection of diagnosis may be demonstrated.

TABLE LXXXIII.

*Mortality from Kidney and Liver Diseases compared with Dropsy  
(so returned) for thirty-seven years, 1866 to 1902.*

YEARS.	DEATHS FROM KIDNEY DISEASES.			DEATHS FROM LIVER DISEASES.			TOTAL DEATHS FROM KIDNEY AND LIVER DISEASES.			DEATHS FROM DROPSY.			Diminution of Dropsy inference to Kidney and Liver Diseases.	Percentage of Dropsy to all.
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.		
1866-1870...	135	94	41	201	113	88	336	207	129	302	143	159	-34	1.96
1871-1875...	295	167	128	202	91	111	497	258	239	294	130	164	-203	1.43
1876.....	50	22	28	45	26	19	95	48	47	70	35	35	-25	1.70
1877.....	67	40	27	52	23	29	119	63	56	64	25	39	-55	1.44
1878.....	80	50	30	49	25	24	129	75	54	44	23	21	-85	.99
1879.....	79	51	28	52	27	25	131	78	53	54	28	26	-77	1.21
1880.....	91	52	39	58	29	29	149	81	68	46	22	24	-103	.95
1876-1880...	367	215	152	256	130	126	623	345	278	278	133	145	-345	1.25
1881.....	79	40	39	46	30	16	125	70	55	48	23	25	-77	.96
1882.....	86	50	36	62	34	28	148	84	64	52	23	29	-96	1.02
1883.....	129	72	57	51	27	24	180	99	81	47	21	26	-133	.89
1884.....	118	53	65	48	22	26	166	75	91	40	20	20	-126	.78
1885.....	159	92	67	61	24	37	220	116	104	44	30	14	-176	.82
1881-1885...	571	307	264	268	137	131	839	444	395	231	117	114	-608	.89
1886.....	155	85	70	54	29	25	209	114	95	45	18	27	-164	.77
1887.....	169	92	77	86	40	46	255	132	123	35	14	21	-230	.55
1888.....	213	102	111	68	38	30	281	140	141	47	18	29	-234	.71
1889.....	210	119	91	70	30	40	280	149	131	42	14	28	-238	.67
1890.....	229	116	113	65	42	23	294	158	136	44	18	26	-250	.63
1886-1890...	976	514	462	343	179	164	1,319	693	626	213	82	131	-1106	.67
1891.....	245	123	122	81	41	40	326	164	162	35	8	27	-291	.52
1892.....	258	135	123	89	39	50	347	174	173	39	17	22	-308	.53
1893.....	302	154	148	72	43	29	374	197	177	39	11	28	-335	.52
1894.....	313	152	161	93	43	50	406	195	211	7	3	4	-399	.10
1895.....	341	176	165	81	43	38	422	219	203	4	1	3	-418	.05
1891-1895...	1,459	740	719	416	209	207	1,875	949	926	124	40	84	-1751	.34
1896.....	395	209	186	110	56	54	505	265	240	2	1	1	-503	.03
1897.....	387	198	189	58	31	27	445	229	216	2	1	1	-443	.03
1898.....	471	238	233	91	41	50	562	269	293	3	1	2	-559	.04
1899.....	477	241	236	92	48	44	569	289	280	.....	.....	.....	-569	.....
1900.....	516	240	276	100	56	44	616	296	320	.....	.....	.....	-616	.....
1896-1900...	2,246	1,116	1,130	451	232	219	2,697	1,348	1,349	7	3	4	-2690	.....
1901.....	505	266	239	100	54	46	605	320	285	.....	.....	.....	-605	.....
1902.....	535	290	245	112	54	58	647	344	303	.....	.....	.....	-647	.....
Total, 37 yrs	7,089	3,709	3,380	2,349	1,199	1,150	9,438	4,908	4,530	1,449	648	801	-7989	.70

## MEASLES.

There were 25 decedents from measles as a cause of death in 1902.

This number represents .19 per cent. of all causes, and a proportion of .06 to every 1,000 of the population.

Of the 25, there were 17 males and 8 females.

Of parentage there were 5 of native and 20 of foreign.

During the last ten years the proportion of mortality from measles has been about 50 of native to every 100 of foreign parentage.

During 1902 the number of decedents under 5 years of age was 22.

The number in the different divisions of the State may be found in Table LXXXIV.

## TABLE LXXXIV.

*Mortality in the State from Measles, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	92	.60	44	48	26	66	6	4	12	35	25	....
5 years, 1871-1875..	102	.50	43	59	53	49	5	12	7	39	35	4
1876.....	4	.10	.....	4	1	3	.....	.....	.....	4	.....	.....
1877.....	11	.25	3	8	2	9	.....	.....	1	8	2	.....
1878.....	81	1.82	39	42	25	56	2	3	.....	26	50	.....
1879.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1880.....	9	.20	3	6	2	7	.....	.....	.....	6	3	.....
1876-1880.....	105	.47	45	60	20	75	2	3	1	44	55	.....
1881.....	37	.74	17	20	15	22	.....	1	2	9	25	.....
1882.....	6	.12	1	5	.....	6	.....	.....	.....	2	4	.....
1883.....	14	.27	11	3	9	5	.....	1	.....	3	8	2
1884.....	18	.35	10	8	5	13	1	6	1	3	7	.....
1885.....	45	.84	27	18	19	26	.....	7	2	27	8	1
1881-1885.....	120	.46	66	54	48	72	1	15	5	44	52	3
1886.....	18	.30	11	7	4	14	.....	5	.....	4	9	.....
1887.....	132	2.08	69	63	57	75	.....	5	8	26	90	3
1888.....	11	.22	5	6	3	8	.....	2	.....	7	2	.....
1889.....	29	.47	15	14	10	19	.....	8	.....	7	14	.....
1890.....	92	1.32	45	47	42	50	2	10	.....	41	31	8
1886-1890.....	282	.88	145	137	116	166	2	30	8	85	146	11
1891.....	12	.18	7	5	4	8	1	2	2	3	3	1
1892.....	28	.38	14	14	10	18	.....	2	4	11	11	.....
1893.....	100	1.34	56	44	33	67	.....	11	.....	22	64	3
1894.....	9	.12	4	5	3	6	.....	.....	2	2	5	.....
1895.....	53	.70	24	29	11	42	.....	5	.....	8	40	.....
1891-1895.....	202	.54	105	97	61	141	1	20	8	46	123	4
1896.....	58	.77	28	30	22	36	.....	6	3	28	19	2
1897.....	33	.46	21	12	11	22	5	1	1	8	18	.....
1898.....	18	.26	11	7	3	15	.....	.....	1	12	4	1
1899.....	47	.63	22	25	12	35	.....	5	.....	13	27	2
1900.....	185	2.10	87	98	79	106	4	25	.....	48	99	9
1896-1900.....	341	.90	169	172	127	214	9	37	5	109	167	14
1901.....	15	.19	10	5	3	12	.....	1	.....	10	3	1
1902.....	25	.31	17	8	5	20	1	.....	1	16	7	.....
Total, 37 years.....	1,284	.63	644	640	469	815	27	122	47	428	623	37

\* Exclusive of Providence city.

## OLD AGE.

The number of deaths, in 1902, attributed to old age as a cause, was 261. This is 27 more than in 1901.

This number represents 3.28 per cent. of all causes, and a proportion of .58 to every 1,000 of the population.

Of the 261 decedents from old age, 100 were males and 161 were females, or about 62 males to every 100 females.

Of the parentage of the 261, there were 148 of native and 113 of foreign parentage.

The following Table will present the statistics of deaths in Rhode Island from old age for thirty-seven years:

## TABLE LXXXV.

*Mortality in the State from Old Age, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870.	998	6.48	366	632	764	284	55	102	157	233	267	134
1871-1875.....	1,158	5.64	467	691	833	325	61	103	161	332	348	153
1876.....	241	6.18	107	134	177	64	12	14	38	65	71	41
1877.....	213	5.00	96	117	145	68	12	23	29	57	63	29
1878.....	222	5.25	84	138	172	50	15	8	32	76	61	30
1879.....	220	5.22	82	138	152	68	14	19	26	69	67	25
1880.....	273	5.95	121	152	186	87	12	20	34	90	73	44
1876-1880... ..	1,169	5.24	490	679	832	337	65	84	159	357	335	169
1881.....	247	5.29	101	146	167	80	12	24	36	93	72	10
1882.....	283	5.89	110	173	190	93	20	25	40	106	79	13
1883.....	275	5.22	105	170	184	91	17	18	44	91	84	21
1884.....	293	5.68	101	192	196	97	16	20	39	106	86	26
1885.....	267	4.95	86	181	183	84	9	32	47	87	70	22
1881-1885.....	1,365	5.27	503	862	920	445	74	119	206	483	391	92
1886.....	276	4.69	101	175	181	95	16	24	36	100	73	27
1887.....	278	4.38	103	175	167	111	17	19	29	109	76	28
1888.....	290	4.35	108	182	198	92	16	26	25	124	64	35
1889.....	227	3.63	75	152	136	91	10	23	23	73	71	27
1890.....	198	2.87	72	126	123	75	16	19	19	59	63	22
1886-1890.....	1,269	3.97	459	810	805	464	75	111	132	465	347	139
1891.....	185	2.80	83	102	121	64	18	16	26	65	41	19
1892.....	256	3.46	95	161	168	88	9	24	29	91	71	32
1893.....	183	2.44	72	111	113	70	8	16	19	33	92	15
1894.....	187	2.61	60	127	109	78	12	21	23	64	51	16
1895.....	197	2.61	82	115	105	92	17	17	16	87	51	9
1891-1895.....	1,008	2.78	392	616	616	392	64	94	113	340	306	91
1896.....	206	2.74	84	122	112	94	8	23	13	89	57	16
1897.....	159	2.24	51	108	96	63	7	9	6	69	57	11
1898.....	205	2.97	86	119	135	70	9	11	30	79	56	20
1899.....	228	3.06	85	143	148	80	10	16	37	71	72	22
1900.....	250	2.83	96	154	150	100	15	34	42	72	65	22
1896-1900.....	1,048	2.77	402	646	641	407	49	93	128	380	307	91
1901.....	234	2.94	83	151	147	87	13	18	23	72	76	22
1902.....	261	3.28	100	161	148	113	9	25	42	94	78	13
Total, 37 years..	8,510	4.13	3,262	5,248	5,706	2,804	465	749	1,131	2,806	2,455	904

\* Exclusive of Providence city.



## PERITONITIS.

There were 16 deaths which were caused by peritonitis during 1902.

This number represents .20 per cent. of all causes, and a proportion of .04 to every 1,000 of the population.

*Sex.*—Of the 16 decedents from peritonitis, there were 5 males and 11 females.

*Parentage.*—There were 7 of native parentage and 9 of foreign.

## PNEUMONIA.

There were 715 decedents from pneumonia in 1902. The number is 27 smaller than in 1901.

This number represents 9.0 per cent. of all causes, and a proportion of 1.6 to every 1,000 of the population.

*Sex.*—Of the 715 deaths from pneumonia, 378 were males and 337 were females, or about 89 females to every 100 males.

*Parentage.*—By parentage, there were 279 of native and 436 of foreign parentage. The proportion of decedents from pneumonia was about 64 of native to each 100 of foreign parentage.

*Season.*—There were 345, or over 48 per cent., of the deaths that occurred during the first four months of the year. The largest mortality, by months, was 120 in December, 116 in February, 91 in March, and 78 in April.

Pneumonia, as a cause of death, has increased in the ratio to whole number of deaths, during the last thirty-seven years, from an average of 6.3 per cent. during the first ten years to an average of 9.2 per cent. during the last ten, including 1902.

The following Table presents, for each of the last thirty-seven years, the number and the percentage, with the sex and the parentage of the decedents from pneumonia, and the number in each year, in each division of the State:

## TABLE LXXXVI.

*Mortality in the State from Pneumonia, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	928	6.0	467	461	556	372	43	56	66	287	407	69
1871-1875.....	1,331	6.5	667	664	783	548	54	71	62	385	602	97
1876.....	339	8.2	164	175	162	177	13	23	16	97	163	27
1877.....	226	5.1	104	122	127	99	10	7	14	81	98	16
1878.....	317	7.1	143	174	176	141	10	11	18	110	140	28
1879.....	311	7.4	148	163	163	148	7	15	15	103	156	15
1880.....	364	7.9	180	184	177	187	26	16	18	92	192	20
1876-1880.....	1,557	7.0	739	818	805	752	66	72	81	483	749	106
1881.....	327	6.5	177	150	190	137	10	23	17	81	174	22
1882.....	314	7.2	178	166	163	181	10	22	24	61	176	21
1883.....	400	7.8	192	208	198	202	19	21	34	108	204	14
1884.....	363	7.1	167	196	192	171	10	13	17	125	172	26
1885.....	465	8.6	214	251	271	194	15	20	33	151	227	19
1881-1885.....	1,899	7.3	928	971	1,014	885	64	99	125	556	953	102
1886.....	481	8.2	232	249	234	247	17	29	37	161	209	28
1887.....	488	7.7	260	228	227	261	13	27	39	142	227	40
1888.....	508	7.7	274	234	227	281	16	37	29	171	219	36
1889.....	468	7.7	255	228	213	270	18	37	29	169	208	22
1890.....	569	8.2	288	281	247	322	16	36	30	206	216	35
1886-1890.....	2,529	7.9	1,309	1,220	1,148	1,381	80	166	164	849	1,109	161
1891.....	568	8.5	270	298	247	321	17	40	70	183	232	26
1892.....	655	8.8	335	320	265	390	18	57	52	216	277	35
1893.....	776	10.4	412	364	319	457	18	42	49	232	392	43
1894.....	665	9.3	344	321	305	360	18	47	46	224	276	54
1895.....	685	9.1	340	345	289	396	28	49	25	243	292	48
1891-1895.....	3,349	9.2	1,701	1,648	1,425	1,924	99	235	242	1,098	1,469	206
1896.....	669	8.9	366	303	274	395	23	45	39	263	256	43
1897.....	635	8.9	337	298	268	367	25	33	36	254	251	36
1898.....	542	7.8	299	243	218	324	8	39	41	198	241	15
1899.....	686	9.2	357	329	317	369	12	66	62	204	314	28
1900.....	966	10.9	479	487	373	593	25	90	43	323	451	34
1896-1900.....	3,496	9.3	1,838	1,660	1,450	2,048	93	273	221	1,242	1,513	156
1901.....	742	9.3	400	342	324	418	24	69	46	262	293	48
1902.....	715	9.0	378	337	279	436	23	45	45	248	324	30
Total, 37 years.....	16,548	8.0	8,427	8,121	7,784	8,764	546	1,086	1,052	5,410	7,479	975

\* Exclusive of Providence city.

## TABLE LXXXVII.

*Exhibiting the Number of Decedents from Pneumonia, in each of the several Periods of Life, during each of the last thirty-seven years, from 1866 to 1902, inclusive.*

YEARS.	PERIODS OF LIFE.											
	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 and over.	Not stated.
1866 .....	57	4	4	5	12	10	14	21	25	32	9	....
1867.....	57	9	2	3	10	11	13	16	25	13	12	1
1868.....	70	4	3	3	15	8	16	18	19	27	13	....
1869.....	64	11	1	2	11	12	9	28	25	16	11	....
1870.....	84	6	5	4	6	7	8	14	20	19	8	1
1871.....	71	7	2	7	10	17	16	16	35	17	19	1
1872.....	83	5	1	7	17	20	19	22	24	19	11	1
1873.....	105	4	8	3	10	14	16	17	24	23	10	....
1874.....	76	9	4	6	17	17	25	21	40	27	8	....
1875.....	120	9	3	8	22	30	35	39	61	43	28	2
1876.....	116	5	4	3	20	20	32	35	48	39	17	....
1877.....	79	2	....	7	15	15	24	27	22	24	9	2
1878.....	115	9	4	10	14	17	28	20	42	45	13	....
1879.....	102	8	1	3	14	27	26	35	38	38	19	....
1880.....	95	18	3	16	14	33	37	46	47	43	12	....
1881.....	102	4	2	5	15	22	26	45	48	31	26	1
1882.....	71	3	4	14	22	36	49	33	41	46	21	4
1883.....	88	15	2	13	32	33	40	53	49	46	27	2
1884.....	103	14	5	11	23	34	24	32	53	37	23	4
1885.....	121	9	10	8	23	29	50	49	76	59	29	2
1886.....	111	10	7	19	32	35	50	58	74	55	30	....
1887.....	132	15	7	7	32	43	51	56	64	53	28	....
1888.....	103	20	5	15	49	48	61	62	70	54	21	....
1889.....	120	14	3	20	27	36	51	57	77	47	31	....
1890.....	161	7	10	12	46	55	55	55	79	54	33	2
1891.....	126	10	4	11	42	54	60	70	84	70	37	....
1892.....	139	10	9	10	39	69	75	74	110	71	44	5
1893.....	176	25	8	17	49	68	96	115	102	70	50	....
1894.....	169	19	9	18	47	56	67	72	78	77	52	1
1895.....	172	16	9	20	49	56	77	66	94	77	49	....
1896.....	220	20	7	17	33	55	56	71	83	66	40	1
1897.....	194	14	10	17	33	46	58	58	73	75	57	....
1898.....	202	11	4	9	23	39	40	58	66	54	36	....
1899.....	238	14	6	19	38	53	50	62	78	74	53	1
1900.....	338	24	7	21	53	77	86	105	109	90	54	2
1901.....	185	20	5	21	49	57	91	94	93	77	49	1
1902.....	285	16	8	20	35	42	51	67	75	84	31	1
Total, 37 years ....	4,850	420	186	411	998	1,301	1,582	1,782	2,171	1,792	1,020	35

*Age.*—Of the decedents from pneumonia, during the period of thirty-seven years, 29 per cent. were under five years of age. Of over fifty years of age the number of decedents was 41 per cent. of the whole number. The following summary will present the percentages for 1902, in round numbers:

Under five years of age.....	29 per cent.
Five years and under twenty, and not stated.....	6 per cent.
Twenty years and under fifty.....	24 per cent.
Fifty years and over.....	41 per cent.

### SCARLET FEVER.

The number of deaths returned as having been caused by scarlet fever, in 1902, was 30. The number is 9 greater than in 1901.

This number represents .4 per cent. of all causes, and a proportion of .07 to every 1,000 of the population.

*Sex.*—Of the 30 decedents from scarlet fever, 16 were males and 14 were females.

*Parentage.*—There were 10 of native parentage and 20 of foreign.

The following Table will present the statistics of scarlet fever for the last forty-seven years, from 1856 to 1902, inclusive, the number and percentage and sex of the decedents from scarlet fever, and the number from scarlet fever in each division of the State. It also shows, from 1866 to 1902, inclusive, the parentage of the decedents from scarlet fever:

TABLE LXXXVIII.

*Mortality in the State from Scarlet Fever, 1856 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
10 years, 1856-1865.	1,440	5.2	700	740	†	†	57	79	191	414	634	65
1866-1870.....	496	3.2	231	265	210	286	26	32	27	142	236	33
1871-1875.....	1,053	5.1	503	550	513	540	40	53	51	302	534	73
1876.....	80	1.9	34	46	42	38	3	2	7	21	35	12
1877.....	62	1.4	26	36	29	33	14	4	3	21	12	8
1878.....	86	1.9	41	45	35	51	3	5	3	14	57	4
1879.....	311	7.4	164	147	130	181	3	6	4	37	255	6
1880.....	468	10.0	215	253	216	252	22	30	11	143	243	19
1876-1880.....	1,007	4.5	480	527	452	555	45	47	28	236	602	49
1881.....	138	3.0	79	59	62	76	11	25	12	41	45	4
1882.....	45	0.9	24	21	16	29	.....	3	16	7	18	1
1883.....	34	0.6	17	17	14	20	1	1	5	9	16	2
1884.....	94	1.8	39	58	41	56	.....	.....	8	28	57	4
1885.....	91	1.7	36	55	48	43	.....	3	6	24	38	20
1881-1885.....	405	1.6	195	210	181	224	12	32	47	109	174	31
1886.....	88	1.5	46	42	29	59	.....	13	2	41	30	2
1887.....	266	4.2	120	146	95	171	9	16	4	80	154	3
1888.....	207	3.1	101	106	91	116	1	29	10	87	80	....
1889.....	51	0.8	24	27	14	37	3	2	6	14	25	1
1890.....	16	0.2	11	5	6	10	.....	3	.....	2	8	3
1886-1890.....	628	2.0	302	326	235	393	13	63	22	224	297	9
1891.....	33	0.5	17	16	12	21	1	3	.....	9	17	3
1892.....	67	0.9	38	29	21	46	1	4	4	20	38	....
1893.....	193	2.6	86	107	75	118	1	23	3	68	97	1
1894.....	123	1.7	59	64	52	71	2	8	2	55	56	....
1895.....	107	1.4	52	55	42	65	1	2	3	37	63	1
1891-1895.....	523	1.4	252	271	202	321	6	40	12	189	471	5
1896.....	53	0.7	30	23	24	29	.....	2	1	9	33	8
1897.....	29	0.4	15	14	13	16	1	1	4	10	12	1
1898.....	21	0.3	10	11	14	7	.....	1	1	13	4	2
1899.....	29	0.4	17	12	13	16	.....	3	.....	6	19	1
1900.....	34	0.3	24	10	22	12	.....	1	6	16	11	....
1893-1900.....	166	0.4	96	70	86	80	1	8	12	54	79	12
1901.....	21	0.3	10	11	9	12	.....	2	2	8	9	....
1902.....	30	0.4	16	14	10	20	.....	6	6	9	9	....
Total, 47 years ....	5,769	2.8	2,785	2,984	1,895	2,431	200	362	398	1,687	2,845	277

\* Not including Providence city.

† Records incomplete.

## CROUP, DIPHTHERIA, AND SCARLET FEVER.

*Season and Mortality.*

The following Table is continued, to show by comparison the influence of season in regard to the mortality from croup and scarlet fever for forty-nine years, and diphtheria for forty-five years. The Table will give the average monthly and quarterly percentages of deaths from each cause:

TABLE LXXXIX.

MONTHS.	CROUP.		DIPHTHERIA.		SCARLET FEVER.	
	— 1853-1902.		— 1858-1902.		— 1853-1902.	
	Number of deaths.	Per cent.	Number of deaths.	Per cent.	Number of deaths.	Per cent.
January.....	407	12.62	635	9.94	786	12.16
February.....	362	11.23	475	7.43	716	11.08
March.....	294	9.12	495	7.74	643	9.95
First Quarter.....	1,063	32.97	1,605	25.11	2,145	33.19
April.....	238	7.39	441	6.90	559	8.65
May.....	168	5.21	434	6.79	582	9.01
June.....	142	4.40	375	5.87	495	7.66
Second Quarter.....	548	17.00	1,250	19.56	1,636	25.32
July.....	110	3.41	343	5.37	368	5.69
August.....	90	2.79	369	5.77	308	4.77
September.....	187	5.80	474	7.42	321	4.97
Third Quarter.....	387	12.00	1,186	18.56	997	15.43
October.....	334	10.36	781	12.22	448	6.93
November.....	452	14.02	841	13.16	539	8.34
December.....	440	13.65	728	11.39	697	10.79
Fourth Quarter.....	1,226	38.03	2,350	36.77	1,684	26.06
Totals.....	3,224	100.00	6,391	100.00	6,462	100.00



## SUICIDE.

The number of deaths by suicide, in Rhode Island, during 1902, was 54, which is one less than in the preceding year.

There were 41 male and 13 female decedents from that cause, or a proportion of 3 males to every 1 of females.

Of the 54, 26 were of native parentage and 28 of foreign.

The means of self-destruction, according to the returns, were as follows :

By cutting throat, 6 ; by drowning, 6 ; by hanging, 10 ; by illuminating gas, 6 ; by chloroform, 1 ; by jumping from window, 1 ; by setting fire to clothing, 1 ; by shooting, 12 ; by arsenic, 1 ; by carbolic acid, 3 ; by hydrocyanic acid, 2 ; by opium, 3 ; by " paris green," 2.

TABLE XC.

*Mortality in the State from Suicide, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	86.	.56	67	19	66	20	2	7	6	31	34	6
1871-1875.....	89	.43	61	28	57	32	3	9	6	20	43	8
1876.....	18	.46	15	3	6	12	.....	.....	1	5	10	2
1877.....	22	.52	16	6	15	7	.....	2	1	5	12	2
1878.....	21	.50	16	5	12	9	3	2	.....	5	7	4
1879.....	13	.31	10	3	5	8	.....	.....	.....	5	7	1
1880.....	10	.20	5	5	8	2	.....	1	1	6	2	....
1876-1880.....	84	.38	62	22	46	38	3	5	3	26	38	9
1881.....	23	.49	19	4	15	8	.....	5	3	.....	14	1
1882.....	31	.64	23	8	23	8	1	4	3	8	12	3
1883.....	25	.47	18	7	11	14	.....	.....	2	8	15	....
1884.....	22	.43	20	2	13	9	.....	1	1	6	11	3
1885.....	20	.37	16	4	11	9	1	1	6	3	6	3
1881-1885.....	121	.47	96	25	73	48	2	11	15	25	58	10
1886.....	17	.29	16	1	12	5	1	3	2	4	7	....
1887.....	16	.25	13	3	8	8	2	.....	2	5	7	....
1888.....	21	.42	20	1	15	6	.....	1	3	6	9	2
1889.....	24	.38	20	4	9	15	.....	2	5	7	10	....
1890.....	19	.28	15	4	12	7	2	.....	1	8	5	3
1886-1890.....	97	.30	84	13	56	41	5	6	13	30	38	5
1891.....	40	.61	27	13	15	25	2	2	.....	10	24	2
1892.....	19	.26	15	4	10	9	.....	.....	4	6	8	1
1893.....	21	.38	18	3	10	11	.....	2	.....	7	12	....
1894.....	45	.63	36	9	24	21	1	3	5	14	19	3
1895.....	31	.41	22	9	13	18	3	2	5	5	13	3
1891-1895.....	156	.46	118	38	72	84	6	9	14	42	76	9
1896.....	38	.51	28	10	20	18	2	1	2	11	20	2
1897.....	41	.58	33	8	21	20	.....	4	5	11	18	3
1898.....	46	.67	38	8	20	26	.....	3	4	14	24	1
1899.....	41	.55	30	11	18	23	1	2	1	7	27	3
1900.....	55	.62	42	13	25	30	1	2	7	24	19	2
1896-1900.....	221	.58	171	50	104	117	4	12	19	67	108	11
1901.....	55	.69	46	9	24	31	3	8	2	26	15	1
1902.....	54	.68	41	13	26	28	4	3	8	14	20	5
Total, 37 years....	963	.47	746	217	524	439	32	70	86	281	430	64

\* Exclusive of Providence city.

## WHOOPING COUGH.

The number of deaths from whooping cough, returned in 1902, was 85, and was 68 more than the number in 1901.

Of the 85 decedents from whooping cough, 28 were males and 57 were females.

There were 41 decedents of native parentage and 44 of foreign.

Eighty-four of the decedents were under 5 years of age.

The following Table will present the mortality from whooping cough for thirty-seven years, 1866-1902, inclusive, with the death rate, sex, parentage, etc., of the decedents :

TABLE XCI.

*Mortality in the State from Whooping Cough, 1866 to 1902, inclusive.*

YEARS.	Number of Deaths.	Per cent.	SEX.		PARENTAGE.		DIVISIONS OF THE STATE.					
			Males.	Females.	Native.	Foreign.	Bristol County.	Kent County.	Newport County.	Providence County.*	Providence City.	Washington County.
5 years, 1866-1870..	153	.99	78	75	68	85	2	13	14	54	63	7
1871-1875.....	160	.78	65	95	64	96	4	11	13	56	73	3
1876.....	48	1.17	19	29	20	28	5	3	1	7	31	1
1877.....	32	.72	18	14	6	26	.....	.....	1	15	16	.....
1878.....	54	1.22	26	28	30	24	.....	1	.....	9	43	1
1879.....	43	.96	17	26	22	21	.....	11	1	12	15	4
1880.....	20	.41	10	10	7	13	.....	.....	2	6	11	1
1876-1880.....	197	.88	90	107	85	112	5	15	5	49	116	7
1881.....	68	1.36	33	35	30	38	.....	2	2	24	40	.....
1882.....	71	1.40	33	38	32	39	.....	4	.....	26	40	1
1883.....	9	.17	6	3	5	4	1	.....	.....	4	4	.....
1884.....	43	.83	17	26	23	20	5	.....	2	6	28	2
1885.....	42	.79	23	19	24	18	.....	1	4	9	24	4
1881-1885.....	233	.90	112	121	114	119	6	7	8	69	136	7
1886.....	49	.83	28	21	17	32	4	3	.....	18	23	1
1887.....	21	.32	9	12	10	11	.....	.....	4	6	10	1
1888.....	44	.75	17	27	16	28	.....	3	2	11	28	.....
1889.....	77	1.23	39	38	36	41	1	12	1	20	43	.....
1890.....	70	1.00	25	45	25	45	2	2	7	27	30	2
1886-1890.....	261	.82	118	143	104	157	7	20	14	82	134	4
1891.....	77	1.16	39	38	37	40	3	1	3	15	54	1
1892.....	25	.34	10	15	14	11	.....	1	3	12	9	.....
1893.....	23	.31	8	15	9	14	1	.....	4	9	7	2
1894.....	129	1.80	52	77	62	67	3	19	15	33	55	4
1895.....	45	.60	19	26	13	32	.....	8	2	7	27	1
1891-1895.....	299	.84	128	171	135	164	7	29	27	76	152	8
1896.....	59	.79	25	34	24	35	2	4	7	16	24	6
1897.....	56	.79	27	29	26	30	1	8	11	14	17	5
1898.....	96	1.39	37	59	50	46	5	2	4	24	57	4
1899.....	86	1.15	30	56	43	43	1	5	1	30	47	2
1900.....	86	.97	31	55	34	52	4	6	3	25	46	2
1896-1900.....	383	1.01	150	233	177	206	13	25	26	109	191	19
1901.....	17	.21	6	11	9	8	.....	1	1	2	13	.....
1902.....	85	1.07	28	57	41	44	2	6	16	28	30	3
Total, 37 years....	1,788	.83	775	1,013	797	991	46	127	124	525	908	58

\* Exclusive of Providence city.

TABLE XCII.

*Presenting the Ratio of Mortality to the Whole Number of Specified Causes of Death, of Twenty Prominent Causes, for twenty-seven years, 1876-1902.*

CAUSES OF DEATH.	YEARS.																										
	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Accidents (all kinds)...	3.40	3.10	2.89	2.43	3.51	3.04	3.44	2.84	3.80	3.09	3.22	3.25	3.01	3.46	3.60	3.54	4.18	3.58	3.29	3.92	3.96	3.71	4.30	3.71	3.82	4.37	4.01
Apoplexy and Paralysis.....	4.01	4.25	4.45	5.21	4.67	5.23	5.52	5.39	5.78	5.38	5.69	4.17	5.50	5.17	4.91	5.08	4.89	5.52	6.26	5.57	5.61	6.62	6.04	6.15	5.76	6.30	6.03
Brain, Diseases of.....	3.64	3.68	3.28	3.73	3.44	3.84	3.60	3.50	2.97	3.61	3.11	3.29	3.43	3.03	3.13	3.36	3.33	3.49	3.11	3.45	4.00	4.63	4.75	3.59	3.30	3.55	3.39
Bronchitis. ....	1.46	1.62	1.89	1.47	1.98	1.80	2.08	2.04	2.29	3.09	2.96	2.77	3.42	4.20	4.01	3.74	4.16	4.24	3.57	3.66	3.69	3.19	3.43	3.24	3.36	2.93	3.28
Cancer. ....	2.72	3.17	2.82	2.96	2.72	3.11	2.75	3.30	3.03	3.59	2.77	2.50	2.99	3.03	2.41	2.66	2.45	2.78	3.01	3.13	3.62	3.59	4.05	3.93	3.32	3.86	4.32
Cholera Infantum....	6.41	6.08	3.97	3.81	5.43	5.15	6.77	4.73	6.31	5.16	6.27	5.60	7.08	6.80	8.39	8.25	8.56	8.18	6.98	6.68	7.29	6.00	6.80	6.36	6.34	5.06	*7.74
Consumption.....	16.78	15.52	15.98	15.09	14.02	15.12	15.33	15.01	14.31	14.45	14.12	11.19	12.13	11.61	12.29	11.18	10.26	9.79	9.92	11.21	11.32	10.97	12.87	13.07	11.23	12.49	11.83
Croup.....	2.61	2.23	2.20	2.28	1.45	2.16	1.60	1.40	1.55	1.74	1.55	1.79	1.19	1.28	1.19	1.01	1.20	.68	.45	.40	.32	.24	.13	.15	.20	.30	.23
Diarrhea. ....	1.87	2.11	1.25	1.26	1.52	1.65	1.87	2.55	2.20	1.55	1.59	2.09	1.20	1.40	1.37	1.26	1.73	1.59	1.17	.80	.78	.88	.87	.90	.29	.27	†1.84

\* Includes diarrhoea and enteritis under 2 years.

† Includes enteritis over 2 years.





## TABLE XCIII.—BIRTHS.

*Occupation of the Fathers.—1902.*

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Actors.....	2	Paint Maker.....	1
Agents and Canvassers.....	22	Pattern.....	8
Architects.....	6	Racquet.....	1
Artesian Well Sinkers.....	1	Reed and Harness.....	1
Artists.....	7	Sail.....	2
Assayers and Analytical Chemists.....	3	Sash and Blind.....	1
Auctioneers.....	1	Screw.....	1
Baggage Masters.....	6	Shoe.....	80
Bakers.....	101	Soap.....	1
Bankers and Brokers.....	16	Spindle.....	1
Bank Officers.....	2	Tool.....	41
Barbers and Hair Dressers.....	132	Trunk.....	2
Bartenders.....	71	Umbrella.....	1
Baseball Players.....	2	Wringer.....	2
Basket Makers.....	1	Bill Posters.....	3
Belt.....	2	Blacksmiths.....	114
Bobbin.....	3	Bleachers and Fullers.....	22
Boiler.....	29	Boat Builders.....	3
Bolt.....	11	Bookbinders.....	1
Box.....	14	Bookkeepers.....	60
Brick.....	2	Bootblacks.....	10
Brush and Broom.....	4	Bottlers.....	13
Cabinet.....	13	Brakemen.....	34
Cap.....	3	Brass Workers.....	2
Carriage, and Trimmers.....	4	Brewers.....	14
Chandelier.....	1	Brick and Stone Layers.....	22
Cigar.....	16	Building Movers.....	2
Clock and Watch.....	3	Butchers and Marketmen.....	70
Core.....	11	Butlers.....	6
Glue.....	1	Cab Drivers and Hackmen.....	11
Handkerchief.....	1	Carders.....	12
Harness and Saddle.....	15	Card Grinders.....	13
Lace.....	1	Carpenters.....	489
Mattress.....	3	Carpet Layers.....	1

TABLE XCIII.—Continued.

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Chasers.....	6	Cutters.....	1
Civil Engineers.....	21	Velvet.....	1
Clergymen.....	24	Dairymen.....	1
Clerks and Salesmen.....	448	Decorators.....	1
Postal.....	5	Dentists.....	8
Railway Mail.....	2	Designers.....	4
Clothiers.....	4	Die Cutters.....	3
Coachmen.....	40	Die Sinkers.....	5
Coal and Wood Dealers.....	16	Draughtsmen.....	10
Dry Goods.....	3	Drivers.....	63
Fish and Oyster.....	7	Druggists and Apothecaries.....	29
Furniture.....	4	Dyers.....	66
Glass.....	1	Electricians.....	57
Hardware.....	3	Electric Light Trimmers.....	4
Hay and Grain.....	6	Elevator Men.....	1
Ice.....	2	Enamellers.....	6
Junk.....	17	Engineers and Firemen.....	231
Leather.....	1	Engravers.....	13
Liquor.....	70	Expressmen.....	22
Lumber.....	4	Farmers.....	300
Music.....	1	File Cutters.....	20
News.....	4	File Forgers.....	6
Oil.....	1	Finishers.....	3
Piano.....	1	Brass.....	4
Provision.....	3	Cloth.....	4
Shoe.....	8	Fire Company Members.....	6
Tile.....	1	Fish Culturists.....	1
Collectors.....	13	Fishermen and Oystermen.....	37
Commercial Travelers.....	36	Florists.....	13
Compositors.....	5	Folders.....	14
Concreters.....	3	Foundrymen.....	5
Conductors.....	42	Fruiters.....	13
Confectioners.....	12	Furniture Movers.....	2
Contractors and Builders.....	25	Furriers.....	2
Cooks and Caterers.....	24	Gardeners.....	44
Coopers.....	7	Gas Fitters.....	8
Coppersmiths.....	1	Gate and Crossing Tenders.....	3

TABLE XCIII.—Continued.

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Grocers.....	109	Melters.....	4
Heaters.....	1	Merchants.....	77
Hostlers.....	39	Messengers.....	1
Hotel and Inn Keepers.....	4	Milkmen.....	25
Saloon and Restaurant.....	38	Millers.....	5
Icemen.....	4	Millwrights.....	5
Inspectors.....	20	Miners.....	2
Cloth.....	3	Motormen.....	64
Insurance Agents.....	59	Moulders.....	104
Real Estate.....	7	Brass.....	3
Inventors.....	2	Musicians.....	17
Iron Rollers and Workers.....	16	Nurses.....	1
Janitors.....	25	Operatives.....	675
Jewelers.....	219	Opticians.....	5
Jobbers.....	6	Painters.....	249
Journalists (Editors and Reporters).....	7	Carriage.....	5
Journeyman.....	5	Paper Hangers.....	5
Knitters.....	11	Pavers.....	1
Laborers.....	2524	Pawnbrokers.....	1
Lathers.....	3	Paymasters.....	3
Laundrymen.....	13	Pearl Workers.....	3
Lawyers.....	9	Peddlers.....	144
Leather Dressers.....	1	Photographers and Lithographers.....	12
Life Saving Service Men.....	1	Physicians and Surgeons.....	30
Lighthouse Keepers.....	3	Piano Tuners.....	4
Linemen.....	15	Picture-framers.....	1
Longshoremen.....	18	Pilots.....	1
Loomfixers.....	69	Pipe Coverers.....	1
Lumbermen.....	2	Plasterers and Stucco Workers.....	14
Machinists.....	356	Platers (Electro).....	7
Mail Carriers.....	20	Gold.....	1
Managers.....	15	Nickel.....	3
Manufacturers.....	26	Silver.....	1
Mariners.....	3	Plumbers.....	66
Masons.....	78	Polishers.....	37
Masseurs.....	2	Silver.....	11
Mechanics.....	28	Pork and Meat Cutters and Pork Packers	19

TABLE XCIII.—Concluded.

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Porters.....	16	Stenographers.....	4
Postmasters.....	2	Stevedores.....	6
Pressman.....	3	Stewards.....	2
Printers.....	40	Stone Cutters and Marble Workers.....	65
Promoters.....	1	Store Keepers.....	19
Proofreaders.....	1	Stove Mounters.....	1
Public Officers.....	4	Students.....	2
Pursers.....	1	Superintendents and Overseers.....	137
Ragpickers.....	1	Switchmen and Gatemen.....	10
Railroad Officials.....	1	Tailors.....	101
Conductors.....	4	Tanners and Curriers.....	4
Employees.....	37	Teachers and Professors.....	20
Refiners.....	3	Music.....	3
Gold.....	5	Teamsters.....	359
Riggers.....	3	Telegraph Operators.....	8
Roll Coverers.....	1	Tinsmiths.....	27
Roofers.....	6	Tobacconists.....	3
Rubber Workers.....	86	Traders.....	2
Sailors.....	2	Train Dispatchers.....	1
Sailors (U. S. N.).....	20	Treasurers.....	3
Scissors Grinders.....	1	Twisters.....	11
Sea Captains and Ship Masters.....	5	Typewriters.....	1
Seamen.....	5	Undertakers.....	12
Secretaries.....	3	Upholsterers.....	10
Sextons.....	5	Waiters.....	27
Sheriffs, Constables, and Policemen.....	40	Watchmen.....	44
Ship Carpenters.....	1	Weavers.....	672
Silversmiths.....	41	Wheelwrights.....	6
Slaters.....	3	Wire Workers.....	13
Soldiers.....	13	Wood Carvers.....	2
Spinners.....	78	Wood Choppers.....	11
Stable Keepers.....	13	Wood Finishers.....	6
Stair Builders.....	1	Wood Sawyers.....	2
Stampers.....	6	Wood Turners.....	21
Station Agents.....	7	Wood Workers.....	3
Steam Pipers.....	29	Wool Sorters.....	18
Steel Rollers and Workers.....	2		

## TABLE XCIV.—MARRIAGES.

*Occupations of the Grooms.—1902.*

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Actors.....	9	Harness and Saddle Makers.....	3
Advertisers.....	1	Knife.....	1
Agents and Canvassers.....	11	Lace.....	1
Architects.....	3	Pattern.....	6
Army Officers.....	1	Pickle.....	1
Naval.....	4	Rubber Stamp.....	1
Artists.....	2	Rug.....	1
Assayers and Analytical Chemists.....	4	Sail.....	1
Authors.....	1	Screw.....	3
Baggage Masters.....	2	Shirt.....	2
Bakers.....	32	Shoe.....	26
Bankers and Brokers.....	13	Soap.....	2
Barbers.....	44	Tool.....	27
Bartenders.....	26	Wringer.....	3
Beamers.....	1	Blacksmiths.....	52
Bellmen.....	1	Bleachers and Fullers.....	19
Belt Makers.....	1	Boat Builders.....	1
Bicycle.....	1	Boatmen.....	1
Bobbin.....	1	Bookbinders.....	2
Boiler.....	2	Bookkeepers.....	42
Bolt.....	2	Bottlers.....	1
Box.....	7	Brakemen.....	15
Brick.....	3	Brewers.....	5
Brnsh.....	2	Brick and Stone Layers.....	12
Cabinet.....	3	Butchers and Marketmen.....	29
Cap and Hat.....	2	Butlers.....	6
Carpet.....	1	Cab Drivers and Hackmen.....	4
Carriage, and Trimmers.....	3	Capitalists.....	1
Cigar.....	7	Cards.....	16
Clock and Watch.....	1	Card Grinders.....	1
Comb.....	1	Carpenters.....	110
Core.....	5	Carpet Layers.....	2
Gas.....	1	Calkers.....	1
Glue.....	1	Chasers.....	1

TABLE XCIV.—Continued.

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Chasers (Silver).....	1	Cutters.....	4
Chiropodists.....	1	Corduoy.....	1
Civil Engineers.....	9	Dancing Masters.....	2
Clergymen.....	8	Decorators.....	2
Clerks and Salesmen .....	304	Dentists.....	10
Postal.....	3	Dermatologists.....	1
Clothiers.....	1	Designers.....	5
Coachmen.....	39	Draughtsmen. ....	13
Coal and Wood Dealers.....	1	Drillers.....	1
Dry Goods.....	2	Drivers.....	29
Fish and Oyster.....	8	Druggists and Apothecaries.....	23
Furniture.....	1	Dyers.....	31
Grain.....	3	Electrical Engineers.....	3
Hardware.....	2	Electricians.....	28
Horse.....	2	Electric Light Trimmers.....	1
Ice.....	1	Elevator Men.....	1
Junk.....	3	Enamelers.....	5
Leather.....	3	Engineers and Firemen.....	84
Liquor.....	10	Engravers.....	8
Lumber.....	3	Expressmen.....	6
Machinery.....	1	Farmers.....	138
News.....	1	File Cutters and Grinders.....	8
Piano.....	1	File Forgers.....	1
Provision.....	5	Finishers.....	11
Shoe.....	4	Brass.....	3
Collectors.....	8	Fire Company Members.....	5
Combers.....	5	Fishermen and Oystermen.....	10
Commercial Travelers.....	29	Fish Culturists.....	1
Commission Merchants (Cotton).....	1	Florists.....	11
Compositors.....	1	Folders.....	8
Conductors and Motormen.....	27	Foresters.....	1
Confectioners.....	4	Foundrymen.....	5
Contractors and Builders.....	8	Fruiterers.....	6
Cooks and Caterers.....	25	Furriers.....	2
Coopers.....	4	Gardeners.....	12
Coppersmiths.....	4	Gasfitters.....	1
Curators.....	1	Glass Workers.....	3



TABLE XCIV.—Continued.

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Grocers.....	20	Merchants.....	20
Gunners (U. S. N.)...	1	Messengers.....	3
Gun and Locksmiths.....	1	Milkmen.....	11
Hatters.....	3	Millers.....	1
Hostlers.....	13	Miners.....	1
Hotels and Inn Keepers.....	5	Motormen.....	24
Saloon and Restaurant.....	8	Moulders.....	43
Ice-men.....	5	Musicians.....	8
Inspectors.....	8	Nurses.....	6
Cloth.....	2	Operatives.....	214
Insurance Agents.....	19	Opticians.....	4
Real Estate.....	12	Painters and Glaziers.....	74
Inventors.....	1	Painters, Carriage.....	2
Iron Workers.....	6	Paper Hangers.....	5
Brass.....	2	Pearl Workers.....	1
Janitors.....	6	Peddlers.....	11
Jewelers.....	108	Photographers and Lithographers.....	3
Journalists (Editors and Reporters).....	4	Physicians.....	23
Knitters.....	6	Piano Tuners.....	1
Laborers.....	381	Pilots.....	4
Lathers.....	2	Plasterers and Stucco Workers.....	4
Laundrymen.....	13	Platers.....	1
Lawyers.....	23	Electro.....	4
Linemen.....	11	Plumbers.....	32
Liverymen.....	3	Polishers.....	5
Longshoremen.....	10	Polishers (Silver).....	2
Loom Fixers.....	17	Pork and Meat Cutters and Pork Packers.....	9
Lumbermen.....	3	Porters.....	21
Machinists.....	233	Pressmen.....	6
Mail Carriers.....	3	Printers.....	24
Managers.....	20	Calico.....	1
Manufacturers.....	18	Public Officers.....	2
Mariners.....	1	Publishers.....	2
Masons.....	20	Railroad Conductors.....	2
Mechanics.....	20	Railroad Employees.....	18
Melters (Gold and Silver).....	1	Railroad Engineers.....	1
Melters (Iron).....	1	Refiners (Gold).....	2

TABLE XCIV.—Concluded.

OCCUPATIONS.	Number.	OCCUPATIONS.	Number.
Roll Coverers.....	1	Superintendents and Overseers... ..	65
Roofers.....	1	Surveyors.....	1
Rubber Workers.....	31	Switchmen and Gatemen.....	1
Sailors.....	12	Tailors.....	23
U. S. Navy.....	1	Tanners and Curriers.....	2
Sea Captains and Ship Masters.....	8	Teachers and Professors.....	12
Seamen.....	7	Teamsters.....	122
Secretaries.....	5	Telegraph Operators.....	9
Servants.....	1	Telephone Operators.....	2
Sextons.....	1	Tinsmiths.....	6
Sheriffs, Constables, and Policeman.....	12	Tobacconists.....	1
Ship Carpenters.....	2	Traders.....	1
Silversmiths.....	24	Treasurers.....	1
Soldiers.....	10	Twisters.....	3
Spinners.....	42	Undertakers.....	1
Stable Keepers.....	4	Upholsterers.....	9
Stair Builders.....	1	Valets.....	2
Stampers.....	1	Veterinary Surgeons.....	1
Station Agents.....	6	Waiters.....	13
Stationers.....	1	Watchmen.....	4
Steam Pipers.....	15	Weavers.....	289
Stenographers.....	3	Window Dressers.....	1
Stevedores.....	2	Wire Workers.. ..	10
Stewards.....	6	Wood Sawyers.....	2
Stone Cutters and Marble Workers.....	21	Wood Turners.....	3
Store Keepers.....	6	Wood Workers.....	13
Students.....	4	Wool Sorters.....	15

TABLE XCV.

*Occupations and Ages of Decedents, from June 1, 1852, to January 1, 1903, comprising a period of fifty years and seven months.  
Alphabetically arranged.*

(OCCUPATIONS UNDER TEN, AND AGES UNDER TWENTY, EXCLUDED.)

OCCUPATIONS.				OCCUPATIONS.			
Total Mortality.	Aggregate Ages.	Average Age.		Total Mortality.	Aggregate Ages.	Average Age.	
MALES.				MALES.			
Actors.....	17	563	34.39	Harness Makers.....	143	7,264	50.80
Agents and Canvassers.....	248	12,897	52.00	Pattern.....	94	5,549	59.03
Insurance.....	41	2,227	54.32	Pump and Block.....	14	788	55.71
Real Estate.....	28	1,799	64.25	Rope .....	25	1,672	66.88
Architects.....	21	1,216	57.90	Sail.....	39	2,290	58.72
Artists.....	45	2,383	53.95	Sash and Blind.....	10	502	50.20
Bakers.....	196	12,423	63.98	Shoe. ....	684	39,697	58.04
Bankers and Brokers.....	186	11,176	60.09	Tool. ....	48	2,518	42.46
Bank Officers .....	77	4,955	64.35	Watch and Clock.....	45	2,527	56.16
Barbers.....	316	11,347	35.91	Blacksmiths and Farriers.....	821	45,129	54.97
Partenders .....	63	2,260	35.87	Bleachers and Fullers.....	78	3,876	49.69
Belt Makers.....	15	870	58.00	Boatmen.....	35	1,914	54.69
Boiler.....	94	4,019	42.76	Boat Builders.....	33	2,002	62.48
Box.....	27	1,349	49.96	Bookbinders.....	29	1,350	46.55
Broom and Brush.....	18	905	50.28	Bookkeepers.....	480	22,018	45.87
Cabinet.....	154	9,108	59.14	Bottlers.....	10	360	36.00
Carriage and Trimmers.....	153	8,988	58.74	Brakemen.....	153	4,591	30.01
Cigar .....	117	5,443	46.52	Brewers.....	25	1,227	49.08

TABLE XCV.—Continued.

OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.	OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.
MALES.				MALES.			
Brick and Stone Layers.....	15	747	49.80	Collectors.....	37	2,039	55.11
Butchers and Marketmen.....	341	17,709	51.93	Commercial Travelers.....	39	1,772	45.44
Calico Printers.....	59	3,243	54.36	Confectioners.....	56	2,574	45.96
Calkers.....	15	1,033	68.87	Contractors and Builders.....	145	8,600	50.31
Car Conductors and Motormen.....	79	3,295	41.71	Cooks and Caterers.....	157	7,750	49.36
Carders.....	19	1,017	53.53	Coopers.....	136	9,010	66.25
Carpenters and Joiners.....	2,503	141,227	56.42	Coppersmiths.....	16	969	60.56
Chasers.....	20	775	38.75	Decorators.....	14	536	37.57
Civil Engineers.....	56	2,825	50.45	Dentists.....	60	3,211	53.52
Clerks and Salesmen.....	1,578	59,795	37.80	Designers.....	27	1,395	51.67
Clergymen.....	297	18,997	63.96	Die Sinkers.....	25	1,209	48.36
Clothiers.....	18	991	55.05	Draughtsmen.....	19	629	33.11
Coachmen.....	223	9,974	44.73	Drivers, Cab, Hack, etc.....	135	5,538	41.02
Coal and Wood Dealers.....	22	1,385	58.41	Druggists and Apothecaries.....	140	9,610	63.64
Fish and Oyster.....	33	1,966	59.58	Dyers.....	165	8,478	51.38
Junk.....	19	1,079	56.79	Electricians.....	29	1,039	35.83
Liquor.....	144	6,724	46.69	Enamellers.....	10	523	52.30
Lumber.....	20	1,127	56.35	Engineers and Firemen.....	561	28,119	50.12
Provision.....	28	1,604	57.29	Engravers.....	159	7,839	49.30
Shoe.....	14	757	54.07	Expressmen.....	120	6,067	50.56

TABLE XCV.—Continued.

OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.	OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.
MALES.				MALES.			
Farmers.....	7,512	504,194	67.12	Inspectors.....	26	1,300	50.00
Finishers.....	34	1,674	49.34	Inventors.....	16	1,054	65.87
File Cutters.....	109	4,508	41.36	Iron Rollers and Workers.....	21	1,006	47.90
Nail.....	12	490	40.83	Janitors.....	134	7,364	54.95
Fire Company Members.....	14	670	47.85	Jewelers.....	1,333	56,756	42.58
Fishermen and Oystermen.....	303	16,351	53.96	Journalists (Editors and Reporters).....	57	2,671	46.86
Florists.....	67	3,693	55.12	Judges and Justices.....	18	1,155	64.22
Founders.....	47	2,423	51.55	Laborers.....	12,027	593,818	49.37
Fruiters.....	10	474	47.40	Lamplighters.....	21	1,152	54.86
Gardeners.....	379	22,540	59.47	Lapidaries.....	13	494	38.00
Gas Fitters.....	65	2,830	43.54	Laundrymen.....	28	1,217	48.46
Gilders.....	12	585	44.58	Lawyers.....	213	12,217	57.36
Grocers.....	532	29,067	54.64	Longshoremen.....	11	459	41.73
Gun and Locksmiths.....	28	1,525	54.46	Loomfixers.....	15	733	48.87
Hatters.....	28	1,538	54.93	Machinists.....	1,927	94,307	48.97
Hostlers.....	183	7,911	43.23	Mail Carriers.....	12	530	44.17
Hotel and Inn Keepers.....	188	10,379	55.21	Manufacturers.....	727	44,305	60.94
Saloon and Restaurant.....	224	10,318	46.06	Mariners.....	530	26,436	49.88
Stable.....	84	4,608	54.86	Masons.....	1,043	58,792	56.37
Store.....	74	3,982	53.81	Mechanics.....	531	28,179	53.07

TABLE XCV.—Continued.

OCCUPATIONS.		Total Mortality.	Aggregate Ages.	Average Age.	OCCUPATIONS.		Total Mortality.	Aggregate Ages.	Average Age.
MALES.					MALES.				
Melters.....	12	667	55.58	Polishers.....	54	2,462	45.59		
Merchants.....	1,475	85,379	57.88	Pork and Meat Cutters and Packers.....	26	1,164	41.77		
Milkmen.....	25	936	37.44	Porters.....	58	2,719	46.88		
Millers.....	55	3,218	59.05	Printers.....	230	12,952	56.31		
Millwrights.....	41	2,805	68.41	Public Officers.....	106	6,584	60.23		
Miners.....	20	1,170	58.50	Railroad Officials.....	109	5,167	47.40		
Moulders.....	404	21,916	51.25	Refiners.....	18	831	46.33		
Musicians.....	90	4,222	46.91	Riggers.....	25	1,343	53.72		
Naval Officers.....	21	1,011	48.14	Roll Coverers.....	34	1,947	57.26		
Nurses.....	19	1,022	53.79	Rubber Workers.....	225	9,549	42.44		
Operatives.....	2,899	128,024	44.13	Sailors.....	354	17,298	48.86		
Painters and Glaziers.....	1,169	57,568	49.25	Sea Captains.....	211	15,009	71.13		
Paperhangers.....	25	1,314	52.56	Servants.....	31	1,379	44.48		
Peddlers.....	219	11,005	50.25	Sextons.....	13	813	62.54		
Photographers and Lithographers.....	33	1,543	46.76	Sheriffs and Policemen.....	157	8,545	54.43		
Physicians.....	308	21,852	59.38	Ship Carpenters.....	89	6,127	68.84		
Pilots.....	27	1,555	57.69	Silversmiths.....	151	6,863	45.45		
Plasterers and Stucco Workers.....	67	3,240	48.36	Slaters.....	10	440	44.00		
Platers.....	14	803	57.36	Soldiers.....	164	5,067	30.90		
Plumbers.....	136	5,375	39.52	Spinners.....	10	566	56.60		



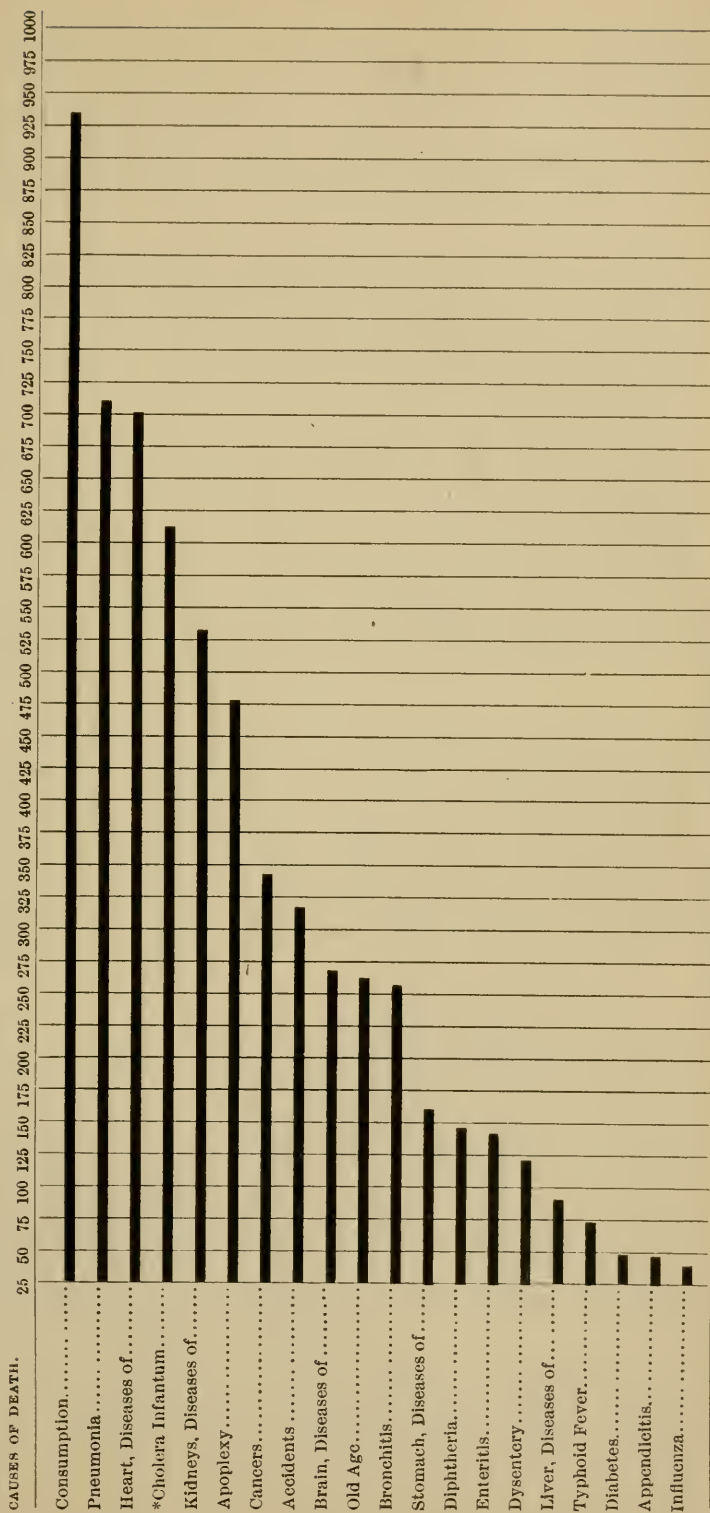
TABLE XCV.—Continued.

OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.	OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.
MALES.				MALES.			
Steamshipers .....	19	738	38.84	Waiters .....	149	5,493	40.22
Stevadores .....	20	936	46.80	Watchmen .....	222	12,782	57.58
Stewards .....	30	1,414	47.13	Weavers .....	86	4,357	50.66
Stone Cutters and Marble Workers .....	398	16,816	49.75	Wheelwrights .....	124	7,464	60.19
Students .....	94	2,156	22.94	Wire Workers .....	19	798	42.00
Superintendents and Overseers .....	452	25,455	56.32	Wood Turners .....	65	2,954	45.45
Switchmen, Gatemen, etc. ....	31	1,733	55.90	Wool Sorters .....	77	3,825	49.68
Tailors .....	490	27,351	55.82	Total .....	51,030	2,852,970	52.84
Tanners and Curriers .....	63	4,014	63.71	FEMALES.			
Teachers and Professors .....	158	7,933	50.21	Boarding-house Keepers .....	27	1,677	62.11
Teamsters .....	823	38,062	46.98	Bookkeepers .....	24	739	30.79
Telegraph and Telephone Operators .....	29	868	29.93	Clerks and Saleswomen .....	63	1,805	28.65
Tinsmiths .....	159	7,759	48.80	Cooks .....	69	2,666	53.13
Tobaccoonis .....	17	977	57.47	Dressmakers and Seamstresses .....	129	17,530	40.86
Traders .....	283	14,259	50.39	Jewelers .....	25	704	28.16
Tradesmen, General .....	185	8,919	48.21	Laboring .....	18	783	43.50
Treasurers .....	13	697	53.62	Laundresses .....	58	2,852	49.17
Undertakers .....	61	3,457	57.00	Milliners .....	67	2,375	35.45
Upholsterers .....	66	2,766	41.91	Nurses .....	149	8,452	56.72
Veterinary Surgeons .....	10	539	53.90				

TABLE XCV.—Concluded.

OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.	OCCUPATIONS.	Total Mortality.	Aggregate Ages.	Average Age.
FEMALES.				FEMALES.			
Operatives.....	1,201	38,639	32.18	Telegraph and Telephone Operators.....	10	299	29.90
Physicians.....	12	677	56.42	Waitresses.....	12	341	28.42
Rubber Workers. ....	25	721	28.84	Weavers.....	12	468	39.00
Servants.....	640	30,283	47.32	Total.....	3,311	134,576	40.65
Sisters of Mercy.....	39	1,578	40.46	Grand Total.....	57,331	2,987,546	52.11
Tailloresses.....	154	7,239	47.01				
Teachers.....	277	13,748	49.63				

Diagram III. Exhibiting the comparative mortality by absolute number of decedents, from twenty principal causes of death in Rhode Island, in 1902.



\* Includes all diarrhoeal diseases under two years of age.



## THE RETURNS OF THE MEDICAL EXAMINERS.

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The number of deaths investigated by the medical examiners during the year 1902 was 496. These deaths resulted from sudden, suspicious, unknown, and violent causes. Of this number 370, or 74.6 per cent., were males; and 126, or 25.4 per cent., were females.

**HOMICIDE.**—The number of deaths from homicide was 11, or 2.2 per cent. of the whole number investigated. Of the 11 cases of homicide, 7 were by gunshot wounds, viz.: of abdomen, 2; of brain, 2; of chest, 1; of heart, 1; of thigh, 1; 1 by being struck on head with axe; 1, fractured skull by base-ball bat; 1, head crushed and throat cut; and 1 by stab wound in femoral artery. In two cases the assailants were brought to trial, convicted, and sentenced; in two instances self-defense was the excuse for the crime; in one case the murderer committed suicide.

**SUICIDE.**—The number of deaths from suicide reported by the medical examiners in 1902 was 56, or 11.3 per cent. of the whole number examined. Death was caused as follows: by drowning, 7; hanging, 10; illuminating gas, 7; incised wound of throat, 5; inhalation of chloroform, 1; jumping from third-story window, 1; by setting fire to self after first pouring kerosene over clothes, 1; by shooting, 14; by arsenic, 1; carbolic acid, 3; hydrocyanic acid, 2; opium, 2; paris green, 2.

**ACCIDENTS.**—The returns of the medical examiners show 258 deaths from accidents, specified as follows: asphyxia, 24; burns and scalds, 26; bicycle, 1; drowning, 43; electric car, 11; electric shock, 3; explosion of dynamite, 1; elevator, 4; firearms, 2; falls, 43; machinery, 8; poison, 8; railroad, 42; and 42 various accidents.

**ASPHYXIA.**—By bedclothes and overlying, 5; illuminating gas, 11; by gasoline which had escaped near berth during the night, 1; by smoke in burning house, 4; by foreign body in larynx (breathed in), 1; choked by food (insane patient), 1; by falling into manger, head down, from hay-loft, 1. Total, 24.

**BURNS AND SCALDS.**—By bonfire, 5; playing with matches, 3; explosion of kerosene lamp, 2; explosion of gasoline in auto-

mobile, 1; in burning building, 3; by clothes taking fire from gas stove, 1; while kindling fire in stove, 1; by clothes taking fire from burning paper used to thaw out frozen water pipes, 1; by fall into dye vat, 1; by upsetting or falling into hot water, 5; by hot water at power station, 1; by hot soup during fight, 1; by hot lead, 1. Total, 26.

BICYCLE.—Knocked down by bicycle while crossing street, 1.

DROWNING.—Bathing or swimming, 5; through ice, 6; overboard from boats, 6; from barge, 1; from plank or raft while playing, 2; by upset rowboats, 2; from bridge into river, 2; from handcar or trestle into water, 1; in trying to save drowning boy, 1; in cistern (cover left displaced), 1; found in water, circumstances of drowning unknown, 16. Total, 43.

ELECTRIC CAR.—Fell or jumped from moving cars, 3; crossing or walking on tracks, 6; by collision of cars with teams, 2. Total, 11.

ELECTRIC SHOCK.—By grasping overhead wires under railroad bridge, 1; while turning on incandescent house light, 1; from live wire, 1 (a lineman). Total, 3.

EXPLOSION OF DYNAMITE.—Premature explosion, wound of head and chest, 1.

ELEVATOR.—By being caught between elevator and floor, 3; fall into well, 1. Total, 4.

FIREARMS.—One while shooting at a target was accidentally shot by brother, and one was shot by playmate while playing with a rifle. Total, 2.

FALLS.—Downstairs, 5; from building or staging, 9; on ground or floor, 9; from window, 4; from ladder, 2; from hay-loft scuttle, 1; from hay-mow while intoxicated, 1; from load of wool, 1; from apple tree, 1; from robe shelf in stable while sleeping, 1; from bed or crib, 2; into hold of ship, 1; against stove, 1; down bank, breaking neck, 1; on circular saw, wound of abdomen, 1; fall during fight, 1; and 2 falls, circumstances unknown. Total, 43.

MACHINERY.—Caught in belting or shafting, 5; struck by heavy weight, (hoisting chain broke), 1; disemboweled by pieces from burst fly-wheel, 1; head crushed by hoisting engine, 1. Total, 8.

ACCIDENTS VARIOUS.—Thrown from carriage or wagon in run-aways, 5; run over by heavy teams, 4; kicked by horses, 3;



crushed leg while riding steeplechase, 1; struck by falling timber, 3; by a falling derrick, 2; by falling logs, while loading them on team, 1; by falling lumber from loaded car by breaking of stake, 1; crushed in collision of steamers *Priscilla* and *Powhattan*, 1; lacerated abdomen by fall of iron girder, 1; explosion of bomb (fireworks), chest torn open, hand blown off, 1; fracture of pelvis while cleaning engine (engine started up), 1; crushed by fall of clay bank (ruptured liver), 1; struck by falling scuttle in school house, 1; thrown from hose wagon, 1; crushed thumb while piling lumber (tetanus), 1; fracture of skull, struck by wagon while intoxicated, 1; by striking head against marble slab, 1; thrown or pushed from saloon (head struck sidewalk), 1; by swallowing needle (needle in heart), 1; fractured skull and other injuries to head, circumstances unknown, 3; heat, 1; exposure to cold, 5; injuries by jumping from window while demented, 1. Total, 42.

The whole number of deaths by accident in the State during 1902 was 317, showing that there were 59 deaths by accident where no medical examiner was called. In these cases a physician had been in attendance and had reported the cause of death. In many instances the death was not immediate. The division of these 317 deaths by accident was as follows (see page 188 of this report): asphyxia, 27; bicycle, 1; 34 by burns and scalds; 47 by drowning; 10 by electric car; 3 by electric shocks; 4 by elevator; 1 by explosion of dynamite; 5 by exposure to cold and storm; 74 by falls; 2 by firearms; 3 by insolation; 7 by machinery; 9 by poison; 45 by railroad; and 45 by various other accidents.

A comparison of these figures with the cases of accidents which are viewed by medical examiners will show the cases which are more open to suspicion of avoidable violence. The difference (31) is more marked under the clause of falls.

Under sudden deaths which were investigated by medical examiners were, septicæmia from abscess on arm, 1; alcoholism, 13; delirium tremens, 4; alcoholism and morphinism, 1; angina pectoris, 1; apoplexy and cerebral hemorrhage, 10; bronchitis, 2; epileptic convulsions, 2; gastro-enteritis, 3; heart disease, 61; acute indigestion, 3; influenza, 1; insanity, exhaustion, 1; kidney disease, 1; locomotor ataxia, 1; malaria, 3; malnutrition, 2; meningitis, cerebral, 1; disease of middle ear, meningitis, 1; myocarditis, 1; nephritis, 5; pleurisy, 1; pneumonia, 7; pulmonary tuberculosis, 6; hemorrhage of lungs, 4; old age and debility, 4; sarcoma of neck, laryngeal spasm, 1; syphilis, 1; congenital syphilis, 2; septicæmia following criminal abortion, 2; septicæmia

- 57. Chronic Lead Poisoning.
- 58. Other Chronic Poisonings (occupational).
- 59. Other Chronic Poisonings.
- 55. Other General Diseases.

## II.

### Diseases of the Nervous System and Organs of Special Sense.

- 60. Encephalitis.
- 61. Simple Meningitis.
- 61. *Repeated. Epidemic Cerebro-spinal Meningitis.*
- 62. Progressive Locomotor Ataxia
- 63. Other Diseases of the Spinal Cord.
- 64. Congestion and Hemorrhage of the Brain.
- 65. Softening of the Brain.
- 66. Paralysis Without Specified Cause.
- 67. General Paralysis.
- 68. Other Forms of mental Alienation.
- 69. Epilepsy.
- 70. Convulsions (Non-Puerperal; 5 years and over).
- 71. Convulsions (under 5 years).
- 72. Tetanus.
- 73. Chorea.
- 74. Other Diseases of the Nervous System.
- 75. Diseases of the Eye and its Adnexa.
- 76. Diseases of the Ear.

## III.

### Diseases of the Circulatory System.

- 77. Pericarditis.
- 78. Acute Endocarditis.
- 79. Organic Diseases of the Heart.
- 80. Angina Pectoris.
- 81. Diseases of the Arteries, Atheroma, Aneurism, etc.
- 82. Embolism and Thrombosis.
- 83. Diseases of the Veins (Varices, Hemorrhoids, Phlebitis, etc.).
- 84. Diseases of the Lymphatic System (Lymphangitis, etc.).
- 85. Hemorrhages.
- 86. Other Diseases of the Circulatory System.

## IV.

### Diseases of the Respiratory System.

- 87. Diseases of the Nasal Fossæ.
- 88. Diseases of the Larynx.
- 89. Diseases of the Thyroid Body.
- 90. Acute Bronchitis.
- 91. Chronic Bronchitis.
- 92. Broncho-pneumonia.
- 93. Pneumonia.
- 94. Pleurisy.
- 95. Congestion and Apoplexy of the Lungs.
- 96. Gangrene of the Lungs.
- 97. Asthma.
- 98. Pulmonary Emphysema.
- 99. Other Diseases of the Respiratory System (Phthisis excepted).

## V.

### Diseases of the Digestive System.

- 100. Diseases of the Mouth and its Adnexa.
- 101. Diseases of the Pharynx.
- 102. Diseases of the Oesophagus.
- 103. Ulcer of the Stomach.

- 104. Other Diseases of the Stomach (Cancer excepted).
- 105. Diarrhœa and Enteritis (under 2 years).
- 105. *Repeated. Chronic Diarrhœa and Enteritis (under 2 years).*
- 106. Diarrhœa and Enteritis (2 years and over).
- 107. Intestinal Parasites.
- 108. Hernia and Intestinal Obstructions.
- 109. Other Diseases of the Intestines.
- 110. Acute Yellow Atrophy of Liver.
- 111. Hydatid Tumors of the Liver.
- 112. Cirrhosis of the Liver.
- 113. Biliary Calculi.
- 114. Other Diseases of the Liver.
- 115. Diseases of the Spleen.
- 116. Simple Peritonitis (Non-puerperal).
- 118. Appendicitis and Abscess of the Iliac Fossa.
- 117. Other Diseases of the Digestive System (Cancer and Tuberculosis excepted).

## VI.

### Diseases of the Genito-Urinary System and its Adnexa.

- 119. Acute Nephritis.
- 120. Bright's Disease.
- 121. Other Diseases of the Kidneys and their Adnexa.
- 122. Calculi of the Urinary Tract.
- 123. Diseases of the Bladder.
- 124. Diseases of the Urethra, Urinary Abscess, etc.
- 125. Diseases of the Prostate.
- 126. Non-venereal Diseases of the Male Genital Organs.
- 127. Metritis.
- 128. Uterine Hemorrhage (Non-puerperal).
- 129. Uterine Tumor (Non-cancerous).
- 130. Other Diseases of the Uterus.
- 131. Cysts and Other Tumors of the Ovary.
- 132. Other Diseases of the Female Genital Organs.
- 133. Non-puerperal Diseases of the Breast (Cancer excepted).

## VII.

### The Puerperal State.

- 134. Accidents of Pregnancy.
- 135. Puerperal Hemorrhage.
- 136. Other Accidents of Labor.
- 137. Puerperal Septicæmia.
- 138. Puerperal Albuminuria and Convulsions.
- 139. Phlegmasia Alba Dolens (Puerperal).
- 140. Other Puerperal Accidents—Sudden Death.
- 141. Puerperal Diseases of the Breast.

## VIII.

### Diseases of the Skin and Cellular Tissue.

- 142. Gangrene.
- 143. Furuncle.
- 144. Acute Abscess, Phlegmon.
- 145. Other Diseases of the Skin and its Adnexa.

## IX.

### Diseases of the Organs of Locomotion.

- 146. Non-tuberculous Diseases of the bones.

147. Arthritis and Other Diseases of the Joints (Tuberculosis and Rheumatism excepted).  
 { 148. Amputation.  
 { 149. Other Diseases of the Organs of Locomotion.

## X.

## Malformations.

150. Congenital Malformations (Stillbirths excluded).

## XI.

## Early Infancy.

- { 151. Congenital Debility, Icterus and Sclerema.  
 { 152. Other Diseases Peculiar to Early Infancy.  
 { 153. Lack of Care.

## XII.

## Old Age.

154. Senile Debility.

## XIII.

## External Causes.

- { 155. Suicide by Poison.  
 { 156. Suicide by Asphyxia.  
 { 157. Suicide by Hanging or Strangulation.  
 { 158. Suicide by Drowning.  
 { 159. Suicide by Firearms.  
 { 160. Suicide by Cutting Instruments.  
 { 161. Suicide by Jumping from High Places.  
 { 162. Suicide by Crushing.  
 { 163. Other Suicides.  
 { 164. Fractures.  
 { 165. Dislocations.  
 { 167. Burns and Scalds.  
 { 168. Burns from Corrosive Substances.  
 { 169. Sunstroke.  
 { 170. Freezing.  
 { 171. Electric Shock.  
 { 172. Accidental Drowning.  
 { 173. Inanition (Starvation).  
 { 174. Absorption of Deleterious Gases (Non-Suicidal).  
 { 175. Other Acute Poisonings.  
 { 166. Other Accidental Traumatisms.  
 { 176. Other External Violence.

## XIV.

## Ill-Defined Diseases.

- { 177. Dropsy.  
 { 178. Sudden Death.  
 { 179. Causes of Death Unspecified or ill-defined.



## APPENDIX B.

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# THE LAWS OF RHODE ISLAND

(As amended February 1, 1896.)

IN RELATION TO THE REGISTRATION OF

BIRTHS, MARRIAGES, AND DEATHS,

AND OF DIVORCE.

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### GENERAL LAWS, CHAPTER 100.

#### OF THE REGISTRATION OF BIRTHS, MARRIAGES, AND DEATHS.

SECTION 1. The town clerks of the several towns, or any person whom the board of aldermen of any city, or the town council of any town, may appoint for that purpose, shall obtain, chronologically record and index, as required by the forms prescribed by section three of this chapter, all information concerning births, marriages, and deaths occurring among the inhabitants of their respective towns; and on or before the first Monday in March, annually, shall make duly certified returns thereof to the secretary of the state board of health for the year ending on the thirty-first day of December next preceding, accompanying the same with a list of the persons required by law to make returns to them who have neglected to do so, and with such remarks relating to the object of this chapter as they may deem important to communicate.

SEC. 2. The secretary of the state board of health shall receive the returns made in pursuance of the preceding section, and annually make a general abstract and report thereof, in form as prescribed by section three of this chapter, and publish not exceeding one thousand copies thereof; and for preparing, tabulating, and publishing said annual report such sum as may be provided by law shall be paid to the state registrar. Said returns, after such report is prepared, shall be deposited in the office of the secretary of state, who shall cause the same to be





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arranged, full alphabetical indices of all the names to be made, and the whole to be bound in volumes of convenient size and carefully preserved in his office.

SEC. 3. The blank forms required to carry out the provisions of this chapter shall, on application, be furnished by the secretary of the state board of health to clergymen, physicians, undertakers, town clerks, clerks of meetings of the Society of Friends, and other persons requiring them, substantially as follows: The record of a birth shall state the date and place of birth, name of the child if it has any, the sex and color of the child, whether born alive or still-born, the name and surname, color, residence, and birthplace of the parents, and the occupation of the father, and the time of recording, so far as the same can be ascertained. The record of a marriage shall state the date of the marriage, place, name, residence, and official station of the person by whom married, names and surnames of the parties, age, color, occupation, and residence of each, condition, that is, whether single or widowed, what marriage, that is, whether first, second, third, or other marriage, the occupation, birthplace, and name of their parents, and the time of recording, so far as the same can be ascertained. The record of deaths shall state the date of the death, name and surname of deceased, the sex, color, and condition, whether single or married, age, occupation, place of death, place of birth, name and birthplace of parents, disease or cause of death, and the time of recording, so far as can be ascertained.

SEC. 4. Every meeting of the Society of Friends, clergymen, and all others authorized to join persons in marriage, shall make a faithful record of every such rite performed by them, in manner and form aforesaid, and return the same for the last preceding month, on or before the second Monday of every month, to the town clerk of the town in which such rite shall have been performed; and no marriage shall be solemnized until the parties shall have signed and delivered to the person about to solemnize it, or to a clerk of a meeting of the Society of Friends, a certificate containing the information required for the record of a marriage, as prescribed by this chapter.

SEC. 5. The town clerk of every town shall annually, in the month of January, collect the information required by this chapter, in relation to all children born in the town during the year ending on the thirty-first day of December next preceding.

SEC. 6. Physicians and midwives shall, on or before the fifth day of each month, report to the clerk of each city or town a correct list of all children born therein during the month next preceding, at whose birth they were present, stating the date and place of each birth, the name of the child if it has any, the sex and color of the child, the name, place of birth and residence of the parents, and the occupation of the father. The fee of the physician or midwife shall be twenty-five cents for each birth so reported, and shall be paid by the city or town in which the report is made.

SEC. 7. Whenever any person shall die, or any still-born child shall be brought forth in this state, the physician attending at such bringing forth or last sickness, if any physician so attended, shall, within forty-eight hours after such

death or bringing forth, leave with the family, if any, or person having the care of the deceased, or the person bringing forth such still-born child, or give to the undertaker or person who conducts the funeral, a certificate stating, in case of a death, the name of the deceased, the date of the death, and the disease or cause of the death; and in case of the bringing forth of a still-born child, the date and the cause of such child being brought forth still-born: *Provided, however,* that if the physician last in attendance shall not have knowledge of such death, or is otherwise reasonably prevented from leaving with the family or giving the undertaker such certificate within the time hereinbefore specified, or before the funeral or disposal of the remains of the deceased, he shall, within five days after having knowledge of such death by notification or otherwise, send to the town or city clerk or registrar of the town or city in which such death occurred a certificate, stating the name, date, and disease or cause of death of such decedent.

SEC. 8. Every town council may appoint a sufficient number of persons to act as undertakers, removable at the pleasure of such council.

SEC. 9. No undertaker or other person shall conduct a funeral, or bury or deposit in a tomb, or remove from this state or otherwise dispose of the remains of any deceased person or still-born child, unless he shall first obtain the physician's certificate required by section seven of this chapter, if a physician was in attendance upon such person who has deceased or the person bringing forth such still-born child, and shall return the same, together with his own certificate of the information required by section three of this chapter, to the town clerk of the town where such death or bringing forth took place: *Provided, however,* that in such towns as allow the burial or removal of bodies of deceased persons without a permit from the town clerk, and if the undertaker or other person who has charge of the disposal of the remains of the deceased person is unable to obtain the said physician's certificate, after reasonable attempts therefor, before the burial or removal of the said remains, then the said undertaker or other person shall make his return as required by section three of this chapter, including the cause of death and the name of the physician last in attendance upon the deceased, immediately to the town or city clerk or registrar of the town or city in which the death occurred. He shall, also, within two days thereafter, notify the physician last in attendance upon the deceased person of the name and date of death of the same.

SEC. 10. Clergymen of all denominations who officiate at the funerals of decedents when no undertaker is in attendance shall, when requested by the state registrar, or the town or city clerk or registrar of the town or city in which such deaths occurred, make returns of such deaths in the same manner and with the same compensation as undertakers.

SEC. 11. Any town may make ordinances more effectually to attain the objects herein contemplated.

SEC. 12. The town clerks, or persons appointed as aforesaid, shall receive for each record of a death made and returned as required by law, and for each

record of a marriage made and returned as required by law, twenty cents, to be paid to them out of their respective town treasuries: *Provided*, that the yearly compensation to be paid out of the town treasury as aforesaid, to any one town clerk or person appointed as aforesaid, who shall perform the duties prescribed by this chapter, shall not be less than five dollars. Undertakers and others making returns of deaths, as required by sections seven and nine of this chapter, shall receive for each full report of a death made to the town clerk, five cents in the cities of Providence and Newport, and ten cents in the other towns of the state.

SEC. 13. Every clergyman, physician, midwife, undertaker, town clerk, clerk of any meeting of the Society of Friends, or other person who shall willfully or unreasonably neglect or refuse to perform any of the duties imposed on or required of him by this chapter, shall be fined not exceeding twenty dollars nor less than two dollars for each offence, one-half thereof to the use of the town in which the offence shall occur, and one-half thereof to the use of the person who shall complain of the same.

SEC. 14. Every clergyman, physician, coroner, undertaker, medical examiner, or clerk of any meeting of the Society of Friends, shall cause his name, residence, and post-office address to be recorded in the town clerk's office of the town where he resides.

SEC. 15. No letters of administration or letters testamentary shall be granted by any court of probate upon the estate of any person, until the death of such person, or the facts from which the same is presumed, shall be duly certified, as near as may be, to the town clerk, in order that the same may be duly registered according to the provisions of this chapter.

SEC. 16. The town and city clerks, and registrars of the several towns and cities, shall have the custody of all records of births, deaths, and marriages of their respective towns, whether made under the statutes now in force or any former statute, and a certificate signed by them, certifying that any written or printed statement of any marriage, birth, or death is a true copy of the record in their custody, shall be admitted as evidence of such marriage, birth, or death.

SEC. 17. Births, marriages, and death of non-residents shall be distinguished from those of residents in the returns by being arranged separately.

SEC. 18. The secretary of the state board of health may from time to time vary the forms of returns, and require such additional information as he may consider necessary to accomplish the object of this chapter.

SEC. 19. The town clerks or other officers appointed under this chapter to collect, record, and return the births in the several cities and towns, shall receive fees therefor as follows: For making record and return of these facts as required by law, twenty cents for each entry and return; to be paid by the city or town in which the birth is recorded.

SEC. 20. The clerk or registrar of each town and city shall, on the first day of each and every month, make a certified copy of all births, marriages, and deaths recorded in the books of said town or city during the previous month,



whenever the parents of the child born, or the bride or the groom, or the deceased person, were resident in any other town or city in this state, or in any other state, at time of said birth, marriage, or death; and shall transmit such certified copies to the clerk or registrar of the town, city, or state in which such parents of the child born, the bride or the groom, or the deceased, were resident at the time of said birth, marriage, or death, stating, in case of a birth, the name of the street and number of the house, if any, where such parents resided, the place of birth of such parents, and the maiden name of the mother, whenever the same can be ascertained; and the clerk or registrar so receiving such certified copies shall record the same in the books kept for recording births, marriages, and deaths. Such certified copies shall be made upon blanks to be furnished for that purpose by the secretary of the state board of health.

SEC. 21. The town clerks of the several towns, or other persons appointed under this chapter to collect the births in the several towns, shall annually in the month of January collect the facts concerning the births within their respective towns, required by this chapter, and shall, so far as practicable, at the same time collect the names of all persons liable to be enrolled in the militia, as required by title thirty-four, and the census of all persons between the ages of five and fifteen years inclusive, as provided by chapter fifty-four, and shall receive therefor such compensation as the town council or the board of aldermen of their respective cities shall determine: *Provided*, that the city of Providence shall be exempt from so much of the provisions of this section as relates to the collection of the statistics of births.

SEC. 22. Blanks for the foregoing purposes shall be furnished, on application therefor, on or before the first day of December in the year preceding, by the state board of health for the collection of births, by the adjutant-general for the taking of the enrolled militia, and by the commissioner of public schools for the census aforesaid.

SEC. 23. The person or persons who shall discharge the duties required by section twenty-one of this chapter, if other than the town clerk, shall make full return thereof to the town clerk of his or their town, on or before the tenth day of February next following.

SEC. 24. The returns required to be made by the clerks of the appellate division of the supreme court, in relation to divorces, to the secretary of the state board of health, or a prepared abstract thereof, shall be published in the annual report of the births, marriages, and deaths in the state.

## SYNOPSIS OF THE LAW OF MARRIAGE.

## GENERAL LAWS, CHAPTER 191.

SECTIONS 1, 2, and 3 show what kindred persons cannot marry, and declare marriages within prohibited degrees null and void.

SECTION 4 makes an exception in favor of Jews, within the degrees of affinity or consanguinity allowed by their religion.

SECTION 5 declares the marriage of persons having a husband or wife living, and of idiots and lunatics, absolutely void.

SEC. 6. Any minister or elder of any religious denomination who shall be *domiciled* in the state, and shall have *registered* with the town clerk and have received a *license*, may join persons in marriage in this state.

SECTION 7 designates who shall be considered as belonging to a religious denomination within the meaning of the preceding section.

SEC. 8. Wardens in the town of New Shoreham may join persons in marriage in said town.

SECTION 9 designates who may join persons in marriage when solemnized among Quakers, or among persons professing the Jewish religion.

SEC. 10. Persons intending to be joined together in marriage in this state must first obtain a license from the town or city clerk of the town in which they respectively reside, or, if not residents of the state, from the clerk of the town or city in which the marriage is to be solemnized. The license shall contain the information called for so far as the same is known to such persons, each of whom shall subscribe to the truth of the same in the presence of the clerk or an assistant clerk of that town or city in which they respectively reside. For issuing such license the town or city clerk shall be entitled to a fee of one dollar: *Provided*, that when the persons intending to be joined in marriage live in different towns or cities in this state the fee shall be fifty cents in each town or city. Such license shall be presented to the minister, elder, justice, warden, or other person who performs the marriage ceremony.

SECTION 11 provides for the control of marriages of minors, and requires the written consent of the parent or guardian before the information provided for in section ten can be given. Persons over eighteen years of age, however, who may have no parent or guardian, may make oath relative to that fact to the city or town clerk, and may then give the required information called for in the application.

SECTION 12 requires that *each* of the persons married must present to the officiating clergyman a certified copy, as provided in section ten. These must



also be signed by the respective parties to the marriage in the presence of the clergyman. This is intended to identify the parties as being the same who appeared for the certificate from the town clerk.

SECTION 13 requires that the officiating clergyman shall endorse the certificate stating that he has joined the parties in marriage, and also that two witnesses of the marriage shall append their signatures. It also provides that the minister shall make a return of the certificate to the town clerk on or before the second Monday of the month succeeding the date of the marriage.

SECTION 14 provides for the care and preservation of the records.

SECTION 15 provides for the work of registration in the city of Providence to be done by the city registrar.

SECTION 16 provides for the recording of the returned certificates in the office of the town clerk, and the final lodgment of the certificates with the secretary of state. These are there to be properly indexed, and open to inspection only in the presence of some one connected with the office of the secretary of state.

SECTION 17 provides that two witnesses shall be present at the marriage ceremony.

SECTION 18 provides that lawful objection to a marriage shall be made in writing, and the officiating clergyman shall not proceed with the marriage until the objection is removed.

SECTION 19 provides for a penalty of six months imprisonment, or a fine of one thousand dollars, for joining persons in marriage without first having been presented with the certified copies required in section ten, or without having first returned any lawful objection to the marriage.

SECTION 20 provides for a penalty a fine of not exceeding one hundred dollars, for failure to perform any of the duties devolving upon the officiating officer under this chapter.

SECTION 21 provides for a fine for joining persons in marriage who have a husband or wife living.

SECTION 22 provides that no marriage shall be deemed or adjudged to be void by any failure on the part of the officiating officers to comply with the law, if the marriage is in other respects lawful and has been performed with a full belief on the part of the persons so married, or either of them, that they have been lawfully joined in marriage.

SEC. 23. Every person who shall solemnize a marriage without being legally authorized thereto shall be fined five hundred dollars.

## GENERAL LAWS, CHAPTER 195.

## OF DIVORCE.

SECTION 1. Divorces from the bond of marriage shall be decreed in case of any marriage originally void or voidable by law, and in case either party is for crime deemed to be or treated as if civilly dead, or from absence or other circumstances may be presumed to be actually dead.

SEC. 2. Divorces shall be decreed for impotency, adultery, extreme cruelty, willful desertion for five years of either of the parties, or for such desertion for a shorter period of time in the discretion of the court, for continued drunkenness, for the habitual, excessive, and intemperate use of opium, morphine, or chloral, for neglect or refusal on the part of the husband, being of sufficient ability, to provide necessities for the subsistence of his wife, and for any other gross misbehavior and wickedness in either of the parties repugnant to and in violation of the marriage covenant.

SEC. 3. Whenever in the trial of any petition for divorce from the bond of marriage it shall be alleged in the petition that the parties have lived separate and apart from each other for the space of at least ten years, the court may in its discretion enter a decree divorcing the parties from the bond of marriage, and may make provisions for alimony.

SEC. 4. Whenever it shall appear that the absence, adultery, cruelty, desertion, or other cause of complaint as aforesaid was committed or occasioned by the collusion of the parties, and done and contrived with an intention to procure a divorce, in such case no divorce shall be decreed.

SEC. 5. Whenever a divorce is granted for fault on the part of the husband, the wife shall have dower as if the husband were dead; but such dower shall be claimed on proceedings begun within six months after the absolute decree, and, if not claimed within said period, or if claim be made for alimony within said period, then dower shall be deemed to be waived and released, and the only relief of the wife shall be a claim for alimony chargeable upon the estate of the husband, or some specific portion thereof as the court may decree: *Provided*, that in case of such divorce between parties married before the Digest of eighteen hundred forty-four went into operation, the wife shall be re-instated in all of her real estate, and have restored to her all of her personal estate not, in either case, disposed of at the date of the filing of the petition for said divorce.

SEC. 6. Whenever a divorce is granted for fault on the part of the wife, the husband, if he be entitled to curtesy-initiate, shall have a life estate in all the lands of the wife as if the wife were dead, but subject to such allowance to the

wife, to be charged on such life estate, as the court in the peculiar circumstances of the case may deem just and proper.

SEC. 7. Otherwise than as provided in the two preceding sections neither husband or wife, on divorce being granted, shall have any right in the estate of the other.

SEC. 8. Divorces from bed, board, and further cohabitation, until the parties be reconciled, may be granted for any of the causes for which by law a divorce from the bond of marriage may be decreed, and for such other causes as may seem to require the same. In case of such divorce the court may assign to the petitioner a separate maintenance out of the estate or property of the husband or wife, as the case may be, in such manner and of such amount as it may think necessary or proper.

SEC. 9. Every petition shall be signed by the petitioner, if of sound mind and of legal age to consent to marriage; otherwise, upon application to the court, and after notice to the party in whose name the petition shall be filed, the court may allow such petition to be signed by a guardian or next friend.

SEC. 10. No petition for divorce shall be granted unless the petitioner shall at the time of preferring such petition be a domiciled inhabitant of this state, and have resided therein for the period of one year next before the preferring of such petition.

SEC. 11. All such petitions shall be filed, heard, and tried in Providence, unless the petitioner shall reside in the county of Newport or in the county of Washington, in which case such petition shall be filed, heard and tried in Newport or South Kingstown respectively.

SEC. 12. The court may by general rule determine the return-day of petitions for divorce and prescribe the notice to be given, within or without the state, on all such petitions, and may issue such process as may be necessary to carry into effect all powers conferred upon it in relation to the same; and said court may also, by general rule, fix the times, during its session, when all petitions for divorce shall be heard, as they may be filed in Providence, Newport, or South Kingstown, respectively. Such general rules shall, however, be subject to such special orders as the court may make in special cases. And, until general rules are made, special order in each case shall be made.

SEC. 13. Whenever any petition for divorce shall have been filed or be pending in the appellate division of the supreme court, and said court shall be of the opinion that sufficient notice of the pendency of said petition shall not, from any cause, have been given to the adverse party, said court may order notice or further notice to the adverse party to be given in such manner as the court may prescribe.

SEC. 14. The said court may regulate the custody and provide for the education, maintenance, and support of the children of all persons by them divorced or petitioning for a divorce, and all persons to whom a separate maintenance may be granted or who may petition for the same; may in its discretion make such allowance to the wife, out of the estate of the husband, for the purpose

of enabling her to prosecute or defend against any such petition for divorce or separate maintenance, in case she has no property of her own available for such purpose, as they may think reasonable and proper; and may make all necessary orders and decrees concerning the same, and the same may at any time alter, amend, and annul for sufficient cause, after notice to the parties interested therein.

SEC. 15. Any woman to whom a divorce from the bond of marriage is decreed may be authorized by such decree to change her name, subject to the same rights and liabilities as if her name had not been changed.

SEC. 16. After the filing and during the pendency of any petition for divorce the said court may make such interlocutory decrees and grant such temporary injunctions as may be necessary until a hearing can be had before said court.

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## GENERAL LAWS, CHAPTER 225.

### OF DIVORCES.

SECTION 9. The clerks of the appellate division shall make returns to the secretary of the state board of health, on or before the first day of March in each and every year, for the year ending on the thirty-first day of December preceding, of all the applications for divorce, showing the number of applications, the number thereof continued, the number granted, and the causes for which the same are granted, but without the names of the parties, in accordance with the blanks which shall be furnished them by the secretary of state.

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## GENERAL LAWS, CHAPTER 287.

### OF MEDICAL EXAMINERS AND CORONERS.

SECTION 1. The governor shall appoint, in each county, able and discreet men, learned in the science of medicine, to be medical examiners in such county.

SEC. 2. The number of medical examiners appointed as provided in the preceding section shall be as follows:

For the county of Washington five examiners, one in each of the five following districts, viz.: District one, composed of the town of Westerly; district two, of the town of South Kingstown; district three, of the town of Hopkinton; district four, of the towns of North Kingstown and Exeter; district five, of the towns of Charlestown and Richmond.

For the county of Kent two examiners, one in each of the two following districts, viz.: District one, composed of the towns of West Greenwich and Coventry; district two, of the towns of East Greenwich and Warwick.



For the county of Providence eleven examiners, one in each of the first nine following districts, and in district ten two examiners, viz.: District one composed of the towns of Scituate and Foster; district two, of the towns of Cranston and Johnston; district three, of the town of Glocester; district four, of the towns of Smithfield and North Providence; district five, of the towns of Burrillville and North Smithfield; district six, of the city of Woonsocket; district seven, of the town of Cumberland; district eight, of the cities of Pawtucket and Central Falls and the town of Lincoln; district nine, of the town of East Providence; district ten, of the city of Providence.

For the county of Bristol two examiners, one in each of the following districts, viz.: District one, composed of the towns of Barrington and Warren; and district two, of the town of Bristol.

\*The number of medical examiners for the county of Newport shall be five, one in each of the first three districts and two in district four; and said districts shall be composed as follows: District one, of the towns of Tiverton and Little Compton; district two, the town of Portsmouth; district three, the town of New Shoreham; district four, the city of Newport and the towns of Middletown and Jamestown.

SEC. 3. If either of the medical examiners shall, at any time, from any cause, be unable to perform the duties of his said office, or shall be deemed by the attorney-general for any cause disqualified therefor, a medical examiner from an adjoining district may be called upon to perform them.

SEC. 4. Every medical examiner shall hold his office for the term of six years, and until another is appointed and qualified to act in his place, unless sooner removed by the appointment of some other person to fill his place.

SEC. 5. Every medical examiner shall, within thirty days after his appointment, and before entering upon the duties of his office, give bond with surety to, and to the satisfaction of, the general treasurer in the sum of one thousand dollars for the faithful performance of his duties.

SEC. 6. If the condition of any such bond be broken, to the injury of any person, actions may be brought upon such bond as upon the official bonds of sheriffs.

SEC. 7. Medical examiners shall make examinations as hereinafter provided, upon bodies of such persons only as are supposed to have come to their death by violence: *Provided*, that in case any prisoner in the state prison or in any county jail dies while so imprisoned, it shall be the duty of the medical examiner of the district in which such prison or county jail is situated, upon being notified of the death of such prisoner, to make at once an examination upon the body of such deceased prisoner.

SEC. 8. When a medical examiner has notice that there has been found, or is lying, within his district the body of a person who is supposed to have come to his death by violence, he shall forthwith repair to the place where such body lies

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\* As amended April 16, 1896.

and take charge of the same; and if, on view thereof and personal inquiry into the cause and manner of the death, he deems a further examination necessary, he shall, upon being thereto authorized in writing by the attorney-general, or by the mayor of the city or president of the town council of the town where such body lies, make an autopsy in the presence of two or more discreet persons as witnesses, and shall then and there carefully reduce, or cause to be reduced, to writing every fact and circumstance tending to show the condition of the body and the cause and manner of death, together with the names and addresses of said witnesses, which record he shall subscribe. Before making such autopsy he shall call the attention of the witnesses to the position and appearance of the body.

SEC. 9. Should the medical examiner deem it advisable to have present a physician as one of the witnesses as aforesaid, such physician shall also subscribe the record made by the medical examiner, and for such service he shall receive a compensation of five dollars.

SEC. 10. Town councils shall select a suitable person to act as coroner for their respective towns, to hold his office for three years and until another is elected and qualified to act in his place, unless sooner removed by the election of some other person to fill his place.

SEC. 11. The coroners so elected shall have exclusive jurisdiction as coroners in their respective towns.

SEC. 12. The coroner shall appoint in writing, under his hand and seal, one or more discreet persons to act as his deputy in case of his absence or inability to act, who shall have all the powers of a coroner, and be subject to like pains and penalties, for malfeasance in office; and the coroner shall file a copy of the appointment in the town clerk's office of his town.

SEC. 13. The coroner may suspend or discharge a deputy. The suspension or discharge of a deputy shall be in writing, addressed to the deputy; and the coroner shall forthwith file a duplicate thereof in the town clerk's office of his town.

SEC. 14. Every coroner and deputy coroner shall, before entering upon the duties of his office, take the engagement prescribed in section five of chapter twenty-five.

SEC. 15. Whenever the coroner has notice that there is in his town any person who has been injured by the criminal act, omission, or carelessness of another, and that said person believes that his death is impending from such injury, said coroner may take the statement of such person concerning the manner in which, and the person by whom, such injury was inflicted; and the statement so taken shall be reduced to writing and, if practicable, in the presence of the injured person.

SEC. 16. If, upon such view, personal inquiry or autopsy, the medical examiner is of the opinion that the death was caused by the act or neglect of some person other than the deceased, he shall at once notify the attorney-general, and coroner of the town where the body was found, or in which it lies, and shall file a duly attested copy of the record of his autopsy, or view, with the said coroner and



a like copy with the attorney-general; and shall in all cases certify to the officer having the custody of the records of deaths in the town in which the deceased came to his death, the name and residence of the person deceased, if known, or, when the name and residence cannot be ascertained, a description of the deceased, as full as possibly may be, for identification, together with the cause and manner by and in which he came to his death.

SEC. 17. The coroner shall thereupon hold an inquest, which may be private; in which case any or all persons, other than those required to be present by the provisions of this chapter, may be excluded from the place where such inquest is held, and such coroner may also direct the witnesses to be kept separate so that they cannot converse with each other until they have been examined. The attorney-general, or some person designated by him, may attend the inquest and examine all witnesses; and the coroner shall cause the testimony to be reduced to writing and signed by the witnesses. The attorney-general may, if he deem it necessary or expedient, direct an inquest to be held in the case of any casualty from which the death of a person results.

SEC. 18. The coroner may issue summons for witnesses, returnable before him. The persons served with such process shall be allowed the same fees, their attendance may be enforced in the same manner, and they shall be subject to the same penalties, as if served with a summons in behalf of the state in a criminal prosecution pending before a district court.

SEC. 19. The coroner shall, after hearing the testimony, draw up and sign a report, in which he shall find and certify when, where, and by what means the person deceased came to his death; his name, if known, and all material circumstances attending his death; and if it appears that his death resulted wholly or in part from the unlawful act of any other person, he shall further state the name of such person, if known to him, and he shall file such report, and the testimony by him taken, together with a copy of the record of the autopsy or view, in the office of the clerk of the court wherein an indictment for the offence may be found.

SEC. 20. The coroner shall bind such witnesses as he deems necessary, or as the attorney-general may designate, by recognizance in a reasonable sum, with sufficient surety, to personally appear, at such time as the coroner may designate, at the district court of the district wherein the inquest is held, and not depart therefrom until discharged by said court; and if any such witness shall refuse to recognize as aforesaid, the coroner shall commit such witness to the jail in the same county, there to remain until he shall so recognize or be otherwise discharged according to law.

SEC. 21. If the report of the coroner shall state that the death was caused by the unlawful act or by the gross carelessness of any other person, and by whose act the same was committed, he shall immediately make a complaint thereof against the person accused, in writing and on oath, to the justice or clerk of the district court in the district where the offence was committed, to the intent that the person killing or being in any way criminally instrumental to the death

may be apprehended; but nothing herein contained shall be so construed as to prevent complaint being made at any time before the finding of the report. And the coroner shall forthwith, in writing, notify the attorney-general of the complaint aforesaid, that he may appear by himself or some person appointed by him, at the examination, and prosecute the claim in behalf of the state.

SEC. 22. If a medical examiner reports that a death was not caused by the act or neglect of some person other than the deceased, and the attorney-general is of a contrary opinion, the attorney-general may, notwithstanding such report, direct an inquest to be held in accordance with the provisions of this chapter; at which inquest he, or some other person designated by him, shall examine all the witnesses.

SEC. 23. The medical examiner may, if he deem it necessary, employ a chemist to aid in the examination of the body, or of substances supposed to have caused or contributed to the death; and such chemist shall be entitled to such compensation for his services as the medical examiner certifies to be just and reasonable, the same being audited and allowed in the manner hereinafter provided.

SEC. 24. When a medical examiner views or makes an examination of the dead body of a stranger, he shall cause the body to be decently buried; and if he certifies that he has made careful inquiry, and that to the best of his knowledge and belief the person found dead is a stranger, having no settlement in any town of the state, his fees, with the actual expense of burial, shall be paid from the general treasury. In all other cases the expense of the burial shall be first paid by the town wherein the body is found, and such town may recover the money so paid from the town where such person last had a settlement: *Provided, however*, that the general treasurer, or any town, ultimately paying any such burial expenses, shall have the right to recover such burial expenses from the estate of the deceased person.

SEC. 25. When services are rendered in bringing to land the dead body of a person found in any of the harbors, rivers, or water of the state, the medical examiner may allow such compensation for such services as he deems reasonable; but this provision shall not entitle any person to compensation for services rendered in searching for a dead body.

SEC. 26. In all cases arising under the provisions of this chapter, the medical examiner shall take charge of any money or other personal property of the deceased, found upon or near the body, and shall deliver the same to the person entitled to its custody or possession; or if not claimed by such person within sixty days, then to an administrator, to be administered upon according to law.

SEC. 27. A medical examiner who fraudulently neglects or refuses to deliver any such property within three days, after demand upon him therefor, shall be imprisoned not exceeding two years or be fined not exceeding five hundred dollars.

SEC. 28. The fees of coroners shall, for the services specified in this chapter, be as follows, namely: For receiving and filing a duly attested copy of the

record of an autopsy, fifty cents; for every page of two hundred words of written testimony, thirty cents; for each day's attendance in holding the inquest, five dollars; for the recognizance of witnesses, thirty-five cents; and for drawing up and filing a report in court, five dollars. Said fees having been audited by the state auditor, upon certificate of the attorney-general, shall be paid by the general treasurer.

SEC. 29. Each medical examiner shall receive fees as follows. For a view without an autopsy, four dollars; for a view and an autopsy, thirty dollars; and for travel, at the rate of ten cents a mile to the place of view. He shall also have power, in case of an autopsy, to employ a clerk at an expense not exceeding three dollars per day for each day's actual service.

SEC. 30. Every medical examiner shall return an account of the expenses of each view or autopsy, including his fees, to the state auditor, and shall annex to his return the written authority under which the autopsy was made. The state auditor shall audit such account and certify to the general treasurer what items in such account are deemed just and reasonable, and such items shall be paid by said treasurer to the persons entitled to receive the same.

SEC. 31. Medical examiners shall, in the books provided by the secretary of state, keep a record of all views of bodies found dead, together with their view and autopsy reports, and, on the first of January, April, July, and October, shall forward to the secretary of the state board of health attested copies of such records of views, together with the view reports and conclusions from autopsies. Should the commission of service of a medical examiner expire before the end of a quarter, the said examiner shall at once forward to the said secretary of the state board of health the records and reports of all cases unreported at date of expiration of said service.

SEC. 32. For each and every copy of said records and reports forwarded to the said secretary of the state board of health, medical examiners shall receive twenty-five cents, which shall be paid by the state upon the voucher of said secretary of the state board of health that such copy of reports and records have been received by him.

SEC. 33. The secretary of the state board of health shall cause the returns received by him for each year, in accordance with this chapter, to be bound together with an index thereto; the state registrar shall prepare or cause to be prepared from the said returns such tabular results as will render them of practical utility, and shall make report thereof annually in connection with the report of births, marriages, and deaths required by chapter one hundred.



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